NATURALIST'S REPOSITORY:

OR

Monthly Miscellany

OF

EXOTIC NATURAL HISTORY:

CONSISTING OF

ELEGANTLY COLOURED PLATES WITH APPROPRIATE SCIENTIFIC AND GENERAL DESCRIPTIONS

OF THE MOST CURIOUS, SCARCE, AND BEAUTIFUL

PRODUCTIONS OF NATURE

THAT HAVE BEEN RECENTLY DISCOVERED

IN VARIOUS PARTS OF THE WORLD;

AND MORE ESPECIALLY SUCH

NOVELTIES

As from their extreme Rarity remain entirely undescribed, or which have not been duly noticed by any preceding Naturalists.

THE WHOLE COMPOSED ACCORDING TO

THE LATEST IMPROVEMENTS IN THE VARIOUS DEPARTMENTS OF

The Science,

AND FORMING COLLECTIVELY A TRULY VALUABLE

COMPENDIUM OF THE MOST IMPORTANT DISCOVERIES

OF

QUADRUPEDS, BIRDS, FISHES, INSECTS, SHELLS, MARINE PRODUCTIONS,

AND EVERY OTHER INTERESTING OBJECT OF NATURAL HISTORY,

THE PRODUCE OF FOREIGN CLIMATES.

BY E. DONOVAN, F.L.S. W.S. &c.

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THE

NATURALIST'S REPOSITORY,

&c. &c. &c.

ENTOMOLOGY.

PLATE CIX.

PAPILIO DECIUS

DECIUS BUTTERFLY

LEPIDOPTERA.

GENERIC CHARACTER.

Antennæ thicker towards the tips, and usually terminating in a club: wings erect when at rest. Fly by day.

NYMPHALES.

PLATE CIX.

SPECIFIC CHARACTER

AND

SYNONYMS.

Wings tailed, with a common white band: posterior ones rufous at the tip, with an eye and two dots of white.

PAPILIO DECIUS: alis caudatis: fascia communi alba, posticis apice rufis: ocellis punctisque duobus albis: *Fabr. Ent. Syst. t.* 3. *p.* 1. *n.* 67. *n.* 210.

PAPILIO DECIUS: *Cram. Nat.* 10. *tab.* 114. *fig. A. B.*

PAPILIO DECIUS: *Drury Ins. tom.* 3. *tab.* 6. *f.* 1.

A native of Guinea. We possess a specimen of this very rare insect that was taken in Africa, and as we were assured, at the distance of many miles inland, by a gentleman attached to a mission sent towards the interior, from the Gold Coast. There was also an example of this insect in the cabinet of the late Mr. Drury, which he received from Sierra Leone.

This is an insect of conspicuous magnitude, and appearance rather remarkable. The prevailing colour above is greyish brown, black, white, blue, and rufous brown, and each of those colours occupy a distinct space, which together produce an effect of some

singularity. Thus the anterior wings are greyish brown at the base, the exterior half black, and the two spaces separated by a broad white band, having a narrow stripe of blue on the interior edge or margin; the posterior half of the lower wings are rufous, varied with black, marked with a transverse black band and two ocellar spots of white; and lastly, it may be observed, that the broad white band which crosses the middle of the first wings, commences at the anterior margin, and after passing over the posterior margin, extends as far as the middle of the lower wings. The appearance of the lower surface is no less remarkable; the prevailing colour is brown, but both the upper and lower wings are marked across the middle with a broad paler band, the inner half of which is pale yellow, the outer half blueish grey. There are also a few lunar marks of pale blue, and a row of white dots at the posterior extremity.

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ENTOMOLOGY.

PLATE CX.

LIBELLULA CÆRULEA

CÆRULEAN DRAGON-FLY

NEUROPTERA.

GENERIC CHARACTER.

Mouth armed with jaws, more than two in number, lip divided, antennæ very thin, filiform and shorter than the thorax: wings expanded: tail of the male furnished with a forked process.

* Lip bifid, Agrion.

SPECIFIC CHARACTER.

Thorax with three yellow lines: body linear, black: wings hyaline, with a broad blue transverse band near the tip.

LIBELLULA CÆRULEA: thorace lineis tribus flavis: corpore nigro: alis hyalinis: fascia versus apicem transversa, lata cærulea.

LIBELLULA CÆRULATA: *Drury Ins.* 3. *tab.* 50. *f.* 1.

PLATE CIX.

This is a grand and very beautiful species of the Libellula tribe, and one moreover of considerable rarity. Mr. Drury presents us with a figure of this insect in the last plate of his concluding volume, informing us at the same time that he had received it from the Bay of Honduras, and that it is an undoubted non-descript. This observation is certainly well-founded; it had not appeared in any preceding publication, not even in that of Fabricius, who had devoted so much attention to the insects of that Cabinet in particular. Mr. Drury, in the index to the volume in which it is noticed, calls it Libellula Cærulata, but without assigning any specific character to the species. From the MSS. of this entomologist, in our own possession, we obtain some further information on the subject than appears in the work; the insect was numbered 79 in his cabinet, and has the following observation annexed to it—"Libellula Cærulata—Muskito Shore. Mr. Shakespear, 1779."

The figure in the annexed plate is copied from the specimen which Mr. Drury mentions. It is considered to the present time, notwithstanding the researches of many travellers in that part of the globe where this specimen was discovered, as a very scarce insect.

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CONCHOLOGY.

PLATE CXI.

CONUS GEOGRAPHICUS

GEOGRAPHIC CONE

Univalve.

GENERIC CHARACTER.

Shell univalve, convolute, turbinate: aperture effuse, longitudinal, linear, without teeth, with the base entire : pillar lip smooth.

SPECIFIC CHARACTER AND SYNONYMS.

Shell oblong, gibbous, crowned : aperture gaping.

Conus Geographicus ; testa-oblonga gibba coronata, apertura dehiscente. *Gmel. Syst. Nat. t.* 1. *p.* 6. 3396. 65.

A picturesque species of the Conus tribe, emphatically denominated, in allusion to the map-like distribution of its markings, Conus

Geographicus. The ground colour is pale, or whitish, sometimes tinged with faint reddish, and the spire with a rosy hue; the spots are chesnut, and of no very determinate form, being intersected with waves and spots of the paler hue in an irregular manner. The *tout ensemble* of those variations, are, however, pleasing, and the shell itself is of a size too conspicuous to be neglected in a cabinet of conchology; it is represented in its natural size in the annexed plate.

Gmelin, speaking of this species, says "Habitat rarior in Oceano Indico et Africano." It is now well known as a native of the Indian and African oceans, and is not particularly uncommon.

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ORNITHOLOGY.

PLATE CXII.

CERTHIA CHRYSOTIS

YELLOW-EARED CREEPER

OR

HONEY-EATER

Picæ.

GENERIC CHARACTER.

Bill arched, slender, somewhat triangular, pointed: tongue various, generally pointed: feet formed for walking.

SPECIFIC CHARACTER

AND

SYNONYMS.

Cinereous brown, beneath white, behind the ears an ovate golden yellow spot, with a spot of black over it.

PLATE CXII.

CERTHIA CHRYSOTIS: cinereo, subtus alba macula pone, aures ovata aurea alteraque, superius nigra. *Lath. Suppl. Ind. Orn.* II. 169. 33.

CERTHIA CHRYSOTIS, YELLOW-EARED CREEPER. *Ibid.*

MELLIVORUS CHRYSOTIS, *Lath. Hist. Birds. Vol.* 4. *p.* 197.

HEORO-TAIRE GRIS, *Vis. Dor.* II. 122. *pl.* 84.

This bird inhabits the forests of New South Wales; feeds on insects, fruits, and various kinds of berries, and is most commonly observed among the white cedar trees, the berries of which appear to be its most grateful food.

The length of our example of the species is six inches and a quarter.

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ENTOMOLOGY.

PLATE CXIII.

PAPILIO ELEUS

ELEUS BUTTERFLY

LEPIDOPTERA.

GENERIC CHARACTER.

Antennæ thicker towards the tips, and usually terminating in a club: wings erect when at rest. Fly by day.

** FESTIVI.

SPECIFIC CHARACTER

AND

SYNONYMS.

The anterior pair black, with a white band: margin of the posterior ones black, with white dots.

PAPILIO ELEUS: alis integerrimis fulvis: margine atro; anticarum fascia, posticarum punctis albis. *Fabr. Ent. Syst. t. 3. p. 1. 51. 156.*

PAPILIO ELEUS: *Jon. fig. pict. 5. tab. 22. fig. 2.*
Drury Ins. 3. pl. 12. fig. 1. 2.

PLATE CXIII.

The upper as well as lower surface of this very beautiful and scarce Papilio being represented in the annexed plate, any minute description of its colours, marks, and general appearance might be deemed superfluous. The figures are faithful copies of the drawings of Mr. Jones, to which Fabricius refers for the species. The insect from which those drawings were taken constituted part of the scientific cabinet of Mr. Jones, but it was not, as Fabricius informs us, a native of America, but of Africa. Mr. Jones received it from Mr. Smeathman, who met with it at Sierra Leone. Mr. Drury also received another specimen from the same intelligent collector, which had been taken by himself likewise, at the same time and place. The description and figure of this latter acquisition appeared in the third volume of Drury's Exotic Entomology, and is slightly adverted to by Fabricius, but without any reference to the plate in which it is contained. That no doubt may remain as to the accuracy of our correction of this error in the Fabrician writings, we shall subjoin the entry of this interesting insect from the original manuscripts in the hand-writing of Mr. Drury. *Dan. Fest.* 15. 285. ELEUS *N. Phal. Sierra Leone. Mr. Smeathman*, 1774. From this note, in addition to the information we were favoured with by Mr. Jones, it becomes obvious, that Fabricius was entirely mistaken in describing Papilio Eleus as an American insect. It appears unquestionably, upon the authority of Mr. Drury, to be a native of Africa, and that he obtained it from Mr. Smeathman, the traveller, who had himself taken it in that region of the globe. Mr. Drury, who had considered it as one of the Nymphales Phalerati, has afterwards placed it with the Danai Festivi, and the numbers annexed in the MSS. refer to the particular space in the drawer in which it was stationed, the 15th specimen, No 285 of the *Nymphales Festivi*.

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ZOOPHYTES.

PLATE CXIV.

GORGONIA CERATOPHYTA var FLAVA

FILIFORM GORGONIA, YELLOW *var.*

Zoophytes.

GENERIC CHARACTER.

Animal growing in the form of a plant: stem coriaceous, corky, woody, horny, bony, or testaceous, composed of glassy fibres, or like stones, striate, tapering, dilated at the base, covered with a vascular or cellular flesh or bark, and becoming spongy and friable when dry. Mouths covering the surface of the stem polypiferous.

SPECIFIC CHARACTER

AND

SYNONYMS.

Branched, with divaricate erect subdivisions, each marked with two furrows: florets white, in irregular rows: flesh purple or yellow: bone black and horny.

PLATE CIX.

GORGONIA CERATOPHYTA : subdichotoma, axillis divaricatis, ramis virgatis bisulcatis, cortice rubro vel flavo, poris bifariis.

GORGONIA CERATOPHYTA : *Gmel.* 3809. 6.

GORGONIA CERATOPHYTA : Horned Gorgonia. *Soland. and Ellis Coral. p.* 81. *n.* 1. *t.* 12. *f.* 2. 3.
Seba Mus. 3. *t.* 107. *n.* 3.

Under the indiscriminate appellation of "sea-weeds and shrubs," the generality of mankind scarcely ever fail to confound two classes of the marine productions, the Algæ Fuci and Confervæ of the sea, which are strictly of the vegetable kind, and those extraordinary aggregations of living animals the Gorgoniæ, and other flexible Zoophytes that partake of the same analogies.

It must be allowed, that if we regard only the general appearance, there is nothing more rational than the conclusion, that beings partaking of the same external form may be of the same kindred kind. Many of the Zoophytes of the tribe adverted to, have the appearance of shrubby vegetables, and their association in the same element with the vegetables peculiar to that element, renders the similitude still more striking; that they are not, however, of the same natural family or class is known to every naturalist, notwithstanding this resemblance, and when the characters by which they are defined be considered duly, it will be obvious to every one that they are very distinct.

To demonstrate the nature of that vitality which vegetables possess, is not within the compass of our present design. The casual observer is too apt to ascribe to this class of the creation no other vital principle than that of "vegetation," or in other words, a gradual development or expansion of its limbs, from the germination of the seed throughout the various stages of its increase in growth, till it arrives at full maturity. We have long since shewn that the life of vegetation differs little from the vitality of the animal creation; it resides in certain principles of the organization which are best understood by the effects produced in the existence of the individual; a vitality that is sustained by the due propulsion and circulation of the natural fluids and secretions of the respective beings, and which can be interrupted only at the expence of existence in the vegetable as well as animal frame. There are many other points of analogy between the animal and vegetable system, but it is still certain, that however closely they approximate, nature has drawn a line of demarkation between them, and that the characters of each are sufficiently definitive for every useful purpose of classification.

The skeleton or bone of the Gorgoniæ presents us with an appearance so completely vegetable, that were we ignorant of its organization in the living state, we might readily mistake it for a ramose or shrubby plant despoiled of its foliage and cortex. When clothed with flesh, it resembles a shrub, covered with bark, somewhat more regularly impressed with equi-distant pores than usual; but the twigs of plants are formed by the progressive protrusion of the vegetable matter in the individual sending forth its secretions towards the extremities of its frame; the twigs of the Gorgoniæ, on the contrary, are the work of numerous animals, operating in

concert, or at least, this is the usually received conclusion. But we are not to deny that here again there may be a nearer approximation to the vegetable economy than is at first imagined, for each of the Gorgoniæ may be in reality a single animal, and the numerous polypii which reside in the fleshy covering, only so many sucker mouths or organs of the same aggregated animal, adapted for the capture of the animalcules which reside in the water, and constitute its food.

In forming either of those opinions the analogies of nature are sufficiently numerous and well-known to justify, at least, a general conclusion. The aggregated body of the Tæniæ, or tape-worms, which consist of many hundred joints, and have two distinct mouths in ev ery joint, is an example too remarkable to be forgotten.

Perhaps it may not be amiss in this place to say a few words further, in order to assist the minds of those who have not hitherto considered the subject, and which may enable them in some degree to determine whether the Gorgoniæ, like plants, constitute each a single individual, or are an aggregation of beings, having no other relation with each other than that of residing in the same societies. This will be best conceived by relating the manners of the Gorgoniæ in their living state, and in their native element.

When in a dormant or quiescent state, those animal beings, the Gorgoniæ, have no other motion than that of vegetables, when their blossoms are expanded, they resemble flowery plants, but their animal nature remains no longer doubtful when the polypes are prompted to exert themselves in the capture of their food: the blossoms are then in motion, and seem to betray perception as well as animation.

Those blossoms are then distinctly perceived to be the organs of living beings, nor is it further doubtful that their food consists of the myriad race of minor creatures which inhabit the same briny element as itself, and which it ensnares and seizes on by the assistance of those organs.

In a quiescent state, the situation of the Polypes can be discovered only by the numerous pores or openings already mentioned, and which are symmetrically arranged over the whole surface, but when the Polypes are proceeding to exert themselves, they are observed protruding their limbs through the openings, and as each resides in a distinct cell, they are pretty equally distributed over the surface. Those Polypes appear to act independently of each other, some being in motion whilst others lie dormant, or concealed. When first protruded from their cell, they each resemble the bud of a flower, and, not perceiving any danger, the blossoms gradually expand; these become at length a complete animal flower, and in this state the briskness of their motions, in seizing the animalculæ that swim near them, is very conspicuous. The approach of any larger animal, or of other danger or annoyance, is at once perceived by the Gorgoniæ, and the polypiferous flowers are immediately withdrawn within the aperture.

We have thus far spoken in general terms of this curious tribe of animated shrubs, the species of which are numerous, and of which some kinds are found in every known sea. The species which is the immediate object of our present observation, is a native of the Bahama Islands and other parts of the West Indies, and is the Gorgonia Ceratophyta of Linnæus. It grows in tufts about

one or two feet in height, and includes several distinct varieties, of which the purple kind is the most frequent. The particular kind shown in our present plate is the variety of a yellow colour. Those Gorgoniæ flourish in great profusion affixed to the rocks and stones at the bottom of the water, where they form extensive sub-marine groves or shrubberies in the sea, and from their lively contrast of colours, present a very gay appearance, when they appear in view as the tide retires. The figure in the annexed plate is seen without any of the animal flowers, the appearance the species assumes as before observed while the Polypes remain quiescent in their cells. When exerted in search of prey, the stems assume the flowery aspect represented in one of the lower twigs. The animals in this species are small, but appear to peculiar advantage when deeply magnified, as may be conceived from the enlarged figures shewn at the bottom of the plate. One of these figures represents an animal of this form, protruded in a bud-like form, from the opening of its cell, another has the arms extended in the attitude of waiting to seize its prey, assuming at such times precisely the character of an octo-petalous flower, and a third has the blossom partly retracted, its petals closing, and the animal preparing to retire into its cell.

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ZOOPHYTES.

PLATE CXV.

GORGONIA CERATOPHYTA *var* RUBRA

FILIFORM GORGONIA RED *var.*

ZOOPHYTES.

GENERIC CHARACTER.

Animal growing in the form of a plant: stem coriaceous, corky, woody, horny, bony, or testaceous, composed of glassy fibres, or like stones, striate, tapering dilated at the base, covered with a vascular or cellular flesh or bark, and becoming spongy and friable when dry. Mouths covering the surface of the stem. Polypiferous.

SPECIFIC CHARACTER

AND

SYNONYMS.

Branched, with divaricate erect subdivisions, each marked with two furrows: florets white, in irregular rows: flesh purple, (or yellow) bone black or horny.

GORGONIA CERATOPHYTA: subdichotoma, axillis divaricatis, ramis virgitas bisulcatis, cortice rubro (vel flavo) poris bifariis.

PLATE CXV.

GORGONIA CERATOPHYTA : Gmel. 3800. 6.

GORGONIA CERATOPHYTA : Horned Gorgonia. *Soland and Ellis Coral. p.* 81. *n.* 1. *t.* 12. *f.* 2. 3.
Seba Mus. 3 *t.* 107. *n.* 3.

The preceding plate, No. 114, was appropriated to the representation of the yellow variety of the Gorgonia Ceratophyta, that which is figured in the present plate is the more common kind and type of the species, the variety which has the flesh of a purple colour. There are some slight differences between those two kinds, but which are much too inconsiderable to be regarded as specifical distinctions. The red or purplish variety is less filiform, or slender in the branches generally, than the yellow kind, but not invariably so; for we have an example now before us in which the contrary is demonstrated in a most satisfactory manner; it is, an individual arising from a single stem, the branches of which are some yellow, the others red, not promiscuously intermingled, but pretty equally divided, all the branches of one principal limb being yellow from its junction with the main stem to the utmost extremities, and those of the others red, in the same manner. The Florets are white.

After the preceding observations, it will be superfluous to add that both the yellow and red variety inhabit the same seas; they are found on the shores of the Bahama Islands, and other parts of the West Indian Seas.

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ENTOMOLOGY.

PLATE CXVI.

PAPILIO CASTOR

CASTOR BUTTERFLY

LEPIDOPTERA.

GENERIC CHARACTER.

Antennæ thicker towards the tips, and usually terminating in a club: wings erect when at rest. Fly by day.

PAP. NYMPH.

SPECIFIC CHARACTER

AND

SYNONYMS.

Wings dentated, two tailed, fulvous with black margin; beneath a white band, and spots of white, including a black spot.

PAPILIO CASTOR: alis dentato bicaudatis fulvis margine nigris: subtus fascia maculisque albis nigra foetis.
Fabr. Ent. Syst. t. 3. *p.* 1. 196.

PLATE CXVI.

This choice and very beautiful species of Butterfly is a native of Africa, the original specimen from which our drawing is taken was brought from Guinea, and constituted a species in the rich cabinet of Mr. Drury, under the name of Papilio Camillus; and it was under this appellation that Mr. Drury described it. Fabricius aware that Cramer had previously denominated the same insect Papilio Castor, conceived it better to retain it under that name, and refer the appellation Camillus to another species. This he has done, and thus the present insect is recorded in his works as Papilio Castor, while the name Camillus is given to a very different insect. The Papilio Camillus of Fabricius is a species of small size, not hitherto noticed by any other than this last mentioned writer, it is one of the African species, of the Banksian Cabinet, and may be deemed of sufficient interest to deserve insertion at some future period in the present publication.

Our present insect Papilio Castor, is a species of very considerable rarity.

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ORNITHOLOGY.

PLATE CXVII.

ALCEDO RUDIS

BLACK AND WHITE KING'S FISHER

PICÆ.

GENERIC CHARACTER.

Bill triangular, thick, strait, long and pointed: tongue fleshy, very short, flat, and pointed: feet generally gressorial.

SPECIFIC CHARACTER

AND

SYNONYMS.

Tail long: above veined with black and white, beneath white.

ALCEDO RUDIS: macroura nigra albido varia subtus alba. *Linn. Syst. Nat.* 1. *p.* 181. 12—*Gmel. Syst.* 1. *p.* 157.—*Lath. Ind. Orn.* 1. 247. 4.

PLATE CXVII.

Ispida ex albo et nigro varia. *Briss.* 4. *p.* 520. 24. *t.* 39. *f.* 2.
Id. 8*vo.* 11. *p.* 190.

Le Martin pêcheur Pie. *Buff.* VII. *p.* 185.—*Pl. Enl.* 62.

Black and White King's Fisher. *Edwards av. t.* 9.

A native of Africa and Asia, and is believed to be an inhabitant of Jamaica, and other islands in the West Indies.

The length of this curious bird is eleven inches.

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CONCHOLOGY.

PLATE CXVIII.

PECTINARIA GUILDINGII

GUILDING'S PECTINARIA

SABELLA LINN.

UNIVALVE.

AMPHITRITE.—*fam.* PECTINARIA. *Lamarck.*

GENERIC CHARACTER.

PECTINARIA. Shell conic, subcylindrical, single, or detached, and composed of sandy particles and broken shells, agglutinated together by means of a membranaceous or papyraceous cement. Animal large and obtuse in front, tapering gradually, and becoming pointed behind; front with two brilliant gold-coloured pectinated tufts: mouth lengthened, bilabiate, and surrounded with numerous short tentacula, and four tufted branchiæ behind upon the second and third segment of the body. On each side of every articulation of the body, a setiform gland; the bristles short and fasciculate.

PLATE CXVIII.

SPECIFIC CHARACTER.

Tube, or shell broad, conic, composed of sandy particles.

PECTINARIA GUILDINGII : testa lata, conica, ex arenulis contexta.

AMPHITRITE : Cirris utrinque binis radiis frontalibus aureo splendissimis fronte plana : membrana ciliata tentaculis qui plurimis os tegentibus. *L. Guilding, M. S. Linn. Soc.*

For our knowledge of this most interesting addition to the family of Linnean Sabella, and to the family Pectinaria of the Amphitrites of Lamark, we are indebted to the kindness of the Rev. Lansdown Guilding, B. A. and Fellow of the Linnean Society; a gentleman resident at St. Vincents in the West Indies ; and by whom it was discovered in the deep waters of the sea surrounding that island. This information was communicated in a valuable paper presented some time ago to the Linnean Society, and read in its due course, on the 19th of March, 1821 ; and in conformity with the resolutions of the Council, was deposited with its explanatory drawing in the Archives of the Society. A few months since, the Reverend author of the paper, was obliging enough to request the Society, to allow the manuscript and the drawing, together with some other of his communications, to be placed in our possession ; with permission to select from them, and publish in our Repository, whatever information they might happen to contain that we should deem applicable to our purpose ; a favour to which the Council was pleased

to accede, upon the implied condition, that they were to be restored when we had fully availed ourselves of the information they would afford us, and this condition of course has been fulfilled; the papers and the drawings have been copied with fidelity, and being returned, are now deposited as before, among the manuscripts of the Society. From the recital of these circumstances, it will be obvious to the scientific reader, that he has only to thank us for our endeavours to contribute to his knowledge, by the insertion of the article in our publication. He is indebted entirely to the liberality of the Linnean Society, and to the good wishes of the author of the communications, for permitting the publication. We believe it to be a new and hitherto undescribed species; and under that impression, have no hesitation in assigning it the specific name of Guildingii, in compliment to the gentleman, through whose attention to the science of of Natural History it was first introduced to the notice of the learned world.

This animal, as it has been well observed by Mr. Guilding, bears a strong resemblance to Amphitrite auricoma, but is nevertheless distinct. By Amphitrite auricoma we conclude the author of the paper adverts to the Zoologia Danica, and in that particular the observation is correct. TheAmphitrite auricoma ofMiiller is the animal inhabitant of the arenaceous tube, called by Linnæus and the Linnæan School, Sabella Belgica, and which we have ourselves met with very rarely in a living state, after a storm, upon our own coast. We are thus assured from our own experience of the accuracy of the remark of Mr. Guilding, but, we may also add, that the new species bears a yet more close approximation to the Amphitrite Capensis, than to

Sabella Belgica, the auricoma of the Zoologia Danica. There are now, including the species Pectinaria Guildingii, three species of the tribe of Amphitrite that appear to be more analogous to each other than either of the rest, and which may be perhaps considered as the whole amount of the true species of this family at present known: these are *Pectinaria Belgica*, *Capensis*, and the third species *Guildingii*, which is now added to the number. Each of those possess characters that are specifically distinct, and among others, they offer one by which they may be distinguished even by the casual observer, without descending to the less obvious characters, by which the respective species are discriminated. The Pectinaria Belgica is of a linear form, and the shelly or arenaceous habitation of sufficient dimensions only to accommodate the body, and this is therefore linear also; or in other words a subconical cylinder, having the interior part of the shell rather larger, and tapering gradually to the posterior extremity. Pectinaria Capensis is about twice the breadth of Belgica, while the length is only the same. Our present species is rather more considerable in point of size, and is, in proportion to its length, nearly twice the breadth of Capensis, or at least thrice that of Belgica, and has the sandy habitation broad and bulky in proportion.

We believe our readers are well persuaded that few authors would more cautiously abstain from every kind of innovation upon the established arrangements of preceding Naturalists than ourselves, or any one be less inclined to adopt changes that should appear to ourselves unnecessary, if not trivial, at the same time that we are ever disposed to approve of such amendments as in the present state of science may be deemed desirable. It is obvious to our view that the genus Sabella, as proposed by Linnæus, is not precisely what the accu-

racy of scientific discrimination may demand; it is heterogeneous, and unnatural, and in the aggregated form in which his annotator Gmelin has left the genus, in the last edition of *Systema Naturæ* it is still more exceptionable. He allows of no distinction founded on the character of the animal inhabitant beyond its being a nereis, a molluscous animal, or worm, defined as having a ringent mouth and two thicker tentacula behind. But to those who have an opportunity of examining those various animals that are thus designated in general terms, the Nereides, it must be obvious, that however obscure their characters' they are materially distinct: the investigation of them is unquestionably attended with difficulties, but those difficulties are not insurmountable. The solitary Sabellæ such as our present species, and the Sabellæ that associate together in masses as the *Sabella alveolata*, present an obvious difference in the structure of their habitations; and the animal has been also found to possess characters that remove them yet further from the solitary Sabellæ. Considerable caution is also requisite in the examination of the Gmelinian Sabellæ, lest we include the larvæ of certain insects that reside in the fresh waters, and of which the Ephemeræ are definitive examples; some of those inhabit an elongated, or cylindrical case, or covering composed of sandy particles and other adventitious matter; the fragments of aquatic shells, or the smaller shells entire, and others again the twigs or stems of aquatic plants and fragments of reeds, and even grass. And there is some reason to apprehend that a few of those supposed fresh water Sabellæ already described may hereafter prove to be in reality no other than the larvæ of the Ephemeræ, Phryganeæ, and other similar tribes of insects, that usually reside in watery places. The definitions of Lamarck are more explicit; the true Sabellæ, or in other words, the animals of this kind that inhabit the marine

element, and can be comprehended under one general family, he denominates *Amphitrites*. Those Amphitrites have the tube membranaceous or horny, and are more or less arenaceous. The animal has the branchiæ disposed at the anterior extemity, and are not divided or covered with an operculum.

The Amphitrites he separates into four divisions, the first of which are distinguished by having the branchiæ short, and never advanced, and the tentacula short or wanting. This section includes the *Pectinaire* and the *Sabellaire*. In the second family, the tentacula are of a very large size, and advance in front in the form of an aigrette, or as a fan shaped plume; this comprises the *Terebella*, and the section to which the former name of Amphitrite is retained. This arrangement so far as it proceeds appears satisfactorily, and it is for this reason that we adopt the *Pectinaire* as a generical distinction, for the new species, that is the immediate object of our present discussion.

It has been already stated that this animal inhabits the deep waters of the sea. The length is two inches and three lines; the body pale, somewhat gelatinous and attenuated behind; feet on each side fourteen, and terminating in tufts of bristles of a splendid golden colour: scutum of the head somewhat heart-shaped and radiated, and which, when the animal lies within its arenaceous covering, serves as a shield or protection tothe opening*

* In *Pectinaria Capensis* we observe some provision of nature analogous to this; it is not a true operculum, but the obtuse front, that presenting itself at the opening of the shell, is of sufficient strength to protect the animal within.

* The figure in the annexed plate, distinguished by a single star, presents a dorsal view of the animal, as it lies within its shell, composed of sandy particles.

** The animal drawn out of the shell, which is then perceived to be gelatinous; this also is a dorsal view.

*** The under surface or belly of the animal; and in this the situation and form of the peduncles or feet are more completely shewn than in the second dorsal view.

**** One of the peduncles, terminating in the tuft of bristles, that serve the animal as feet.

*****The anterior part of the head considerably enlarged, shewing the two pectinated tufts of a splendid gold colour, which stand in front of the head, and partially conceal the tentacula.

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ENTOMOLOGY.

PLATE CXIX.

PAPILIO HONORIUS

HONORIUS BUTTERFLY

Lepidoptera.

GENERIC CHARACTER.

Antennæ thicker towards the tips, and usually terminating in a club: wings erect when at rest. Fly by day.

SPECIFIC CHARACTER

AND

SYNONYMS.

Wings entire blue: tip of the anterior pair black, costal rib brown; posterior wings dotted with black at the base, and striated at the tip.

Papilio Honorius: alis integerrimis cœruleis: anticis apice atris costaque fusca, posticis basi nigro punctatis apice striatis. *Fabr. Ent. Syst. t.* 3. *p.* 1. 151. *n.* 464.

Papilio Honorius: *Jon. fig. pict.* 6. *tab.* 67. *fig* 1.

PLATE CXIX.

A rare species, at present known only to Naturalists from the descriptions left us in the writings of Fabricius; for the figure of the insect has not hitherto appeared in the works of any author. Fabricius describes it from the drawings of Mr. Jones, and the specimen from which the drawings were taken, in the cabinet of the same gentleman. Our figures in the annexed plate, which represent as well the upper as the lower surface, are copied from the drawings of Mr. Jones; the sole authority, as it hence appears, upon which the species intended by Fabricius, can now be positively ascertained.

The native place of Papilio Honorius is unknown.

It may be added, as a general description of this insect, that the prevailing colour on the upper surface is blue, with the tip of the first pair black: the anterior margin brown; and an irregular flexuous band of the same colour, crossing the anterior wings obliquely; the latter passes from the middle of the costal rib, towards the tip, and thus encloses a distinct space of blue, independently of the blue space of the inner half of the wing. The under surface differs, in being of a brown colour instead of blue; with a band of white on the anterior pair, and four spots of blue towards the base: there are also a few spots of black towards the base of the lower wings.

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ENTOMOLOGY.

PLATE CXX.

PAPILIO LYSIMNIA

LYSIMNIA BUTTERFLY

LEPIDOPTERA.

GENERIC CHARACTER.

Antennæ thicker towards the tips and usually terminating in a club ; wings erect when at rest. Fly by day.

SPECIFIC CHARACTER

AND

SYNONYMS.

Wings oblong, entire fulvous, band yellow, at the tip black : anterior pair with a white spot.

PAPILIO LYSIMNIA : alis oblongis integerrimis fulvis : fascia flava apice nigris : anticis macula alba. *Fabr. Ent. Syst. t.* 3. *p.* 1. 498. *n.* 161.
Jon. fig. pict. 2. *tab.* 8.

PLATE CXX.

Papilio Lysimnia is another of those very doubtful species of the Papilio tribe which Fabricius describes, but of which there is no other memorial now extant except the hitherto unpublished drawings of the late Mr. Jones. This will be perceived by the entomologist upon referring to the Fabrician writings. The figure in the upper part of the plate is copied from the original drawings. The lower figure, at the bottom of the plate, would be no less a faithful copy of the upper surface, if it exhibited no trace of the marginal row of white spots, upon the exterior border of the lower wings, for in that drawing the border is immaculate *. Our reason for this deviation from the original design does not arise from any doubt of the accuracy of the original drawing, it is merely intended to exemplify a new variety of the same species that has lately occurred to observation, and which differs in no respect from the other, except in this particular.

We have no information upon which we can implicitly rely respecting the native country of this elegant Papilio. The insect represented in the centre of the plate, and which appears to differ only in a very trifling degree, is from India, and the knowledge of this fact induces us to conclude that the particular kind or variety named Lysimnia by Fabricius, may be also from the same country.

In offering the insect, represented in the centre of the plate, as a probable variety, or rather, as it may be presumed, the female of

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* Fabricius notices the same circumstance in the species Pap. Mopsa, for in some specimens the white marginal dots which are conspicuous on the border of the lower surface, are wanting in the upper surface. "Variat rarius punctis albis tantum in pagina inferiore."

P. Lysimnia, it should be observed that the females are usually larger than the males throughout this tribe, but that their colours are in general less vivid, which is not observable in the supposed female of the species now before us: it may possibly be another species, at the same time that it must be confessed the affinity between the two is so very approximate that we shall not venture to separate them. There is evidently in nature a family of this division of the Heliconii, in which there are at least twenty analogous species, that differ from each other only in certain slight particulars; some of those are assuredly varieties only, while others possess characters that prove them to be specifically distinct. Thus, the insect in the middle of our plate may be readily mistaken for Papilio Honoria of Cramer, (P. Mopsa, of Linnæus), they accord in size and general appearance, yet there is a difference, and such, as when attentively examined, can be considered only as specifical distinctions. There is one character, in particular, that claims especial notice, namely, the form and disposition of the black lines and spaces on the lower wings, the appearance of which is very remarkable. It is from the figure and disposition of the black spaces on the disk of the lower wings that several of the approximating species may be best distinguished.

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ZOOPHYTES.

PLATE CXXI.

GORGONIA FLAMMEA

FIERY-RED GORGONIA

Zoophytes.

GENERIC CHARACTER.

Animal growing in the form of a plant: stem coriaceous, corky, woody, horny, bony, or testaceous, composed of glassy fibres, or like stones, striate, tapering, dilated at the base, covered with a vascular or cellular flesh or bark, and becoming spongy and friable when dry. Mouths covering the surface of the stem polypiferous.

SPECIFIC CHARACTER AND SYNONYMS.

Compressed, ramose and somewhat pinnate; bone flat, horny; flesh scarlet, covered with minute mouths.

Gorgonia Flammea: compressa ramosa subpinnato, osse complanato, corneo carne miniata osculis creberrimis parvis notata. *Soland. and Ellis Coral. p.* 80. *n.* 2. *t.* 11.

Gorgonia Flammea: *Gmel. Syst. Nat. t.* 1. *p.* 6. 3801. 21.

PLATE CXXI.

This kind of Gorgonia is a native of the seas surrounding the promontory of the Cape of Good Hope, and far surpasses, in the brilliancy of its colour, every other species of this tribe of Zoophytes. The colour, which in the dried state is of a fine scarlet, is of a vivid red, resembling the red flame of fire, when in the living state.

The whole surface of the species is beset with fine punctures or openings, which are of an oblong form, and are larger and more sparingly disposed on the main stems than on the smaller ones.

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ENTOMOLOGY.

PLATE CXXII.

LOCUSTA CAMELLIFOLIA, *Fem.*

SHOCK-SHOCK LOCUST, *Female*

HEMIPTERA, *Linn.*

ULONATA, *Fabr.*

GENERIC CHARACTER.

Head inflected, armed with jaws, feelers filiform: antennæ setaceous or filiform: wings four, deflected, convolute, the lower ones plaited: hind legs formed for leaping: claws double on all the feet. GRYLLUS *Linn.*

* Antennæ setaceous; feelers unequal: male with an ocellate spot at the base of each wing-case: tail of the female armed with an ensiform projection. LOCUSTA, *Fabr.*

SPECIFIC CHARACTER

AND

SYNONYMS.

Thorax deflected, wing-cases concave, rounded at the end, and longer than the wing.

PLATE CXXII.

LOCUSTA CAMELLIFOLIA : thorace deflexo, elytris concavis, apice rotundatis, alâ longioribus. *Fabr. Ent. Syst. t.* 2. *p.* 35.—*Spec. Ins. t.* 1. *p.* 256. *Mant. Ins.* 1. *p.* 232. *n.* 4.

GRYLLUS CAMILLIFOLIUS : *Gmel. Linn.* 2064. *p.* 96.

Locusta siccifolia elytris maximis ovatis erectis foliaformibus. *Degeer. Ins.* 3. 438. 2. *tab.* 37. *f.* 5.

Although we cannot introduce this singular species of the Locust tribe as an insect hitherto unnoticed, we may venture to observe, that it is one of those which is very little known, and of which the history has heretofore remained in much obscurity. It appears to have been first produced to the attention of the naturalist in the writings of Degeer, under the name of Locusta siccifolia; Fabricius afterwards published a description of the insect under the name of Locusta Camellifolia, and after him Professor Gmelin inserted it in his edition of Systema Naturæ, adopting the character given by Fabricius, but under the appellation of Gryllus (locusta) Camillifolius.

Some time ago the Rev. Lansdown Guilding, A. B. F. L. S. and now resident at St. Vincent's, in the West Indies, presented a memoir, accompanied with a drawing of the two sexes of this remarkable locust, to the Linnæan Society; this paper was read on the 18th of March, 1823, and subsequently in the last meeting of

the present year, (June, 1825), some additional observations which had been lately communicated on the subject by the same gentleman were also read in the Linnæan Society. This memoir, together with the drawings, have been, at the request of the author and by permission of the Linnæan Society, transferred to our hands for the purpose of publication, and we have now the pleasure of submitting to our readers the copies of the drawings, together with such portions of the descriptive matter as we have deemed most applicable to the purpose of our publication; the originals are of course returned as the property of the Linnæan Society, and are deposited in their library.

Nothing, says the Rev. author of this paper, can appear more extraordinary to the stranger on his first visit to the islands of those tropic regions than the swarms of luminous insects which sometimes illuminate the foliage of the trees in the evening, and which in their flight appear like wandering stars;* while the forests echo with the sounds of others in tones so loud and singular as to excite astonishment. The luminous insects we apprehend to be of the Lampyris and Elater tribe, and probably some others with which we remain unacquainted; the most remarkable of the sonorous kinds is the

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* In Southern Europe such phenomena of the insect tribe are not altogether unknown, although the occurrence is far from common. The most familiar example of luminous insects in the British Isles is the "Glow-worm," or in the language of science "Lampyris Noctiluca," but in this species the female, which is luminous is apterous, or without wings, while the male, which is winged, is not luminous, so that it is only upon the grassy turf or among the bushes that we observe those brilliant little beings of the insect race, and where from the slowness of their motions they appear nearly stationary. In Southern countries, on the contrary, there are

species of locust at present under our consideration. During the day-time it lies concealed among the trees, or low herbage amidst the rocks, for during that period it is mute, but when the sun is setting and evening comes on, its sounds commence, and the noise it produces is so loud, that it may be heard at the distance of a mile from the spot where it lies concealed ; in the island of St. Vincent's, where those insects inhabit the woody places among rocks, it is from this circumstance, in addition to the peculiar sound emitted, that the name of *Shock-shock*, which it bears, has been assigned to it.

The unusual loudness of the sound produced by this insect, we may naturally conclude would engage the particular attention of the naturalist, and the memoir of Mr. Guilding affords us a very satisfactory explanation of the means by which it is occasioned. The generality of mankind would at once be led to expect, under all such circumstances, that the organs of sound were to be sought for in the mouth, but this idea is altogether unfounded, the organs of sound are seated at the base of the wing-cases, where one space of the wing-case of the right side is covered over by a corresponding portion of the wing-case of the left side, and it is the peculiar organization of the two surfaces of this part, where they lie upon, or face

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several species of this tribe, the males of which are luminous as well as the females, and those in the evening, when on the wing among the trees, irradiate the foliage with their "fairy" splendour, like a host of stars in ceaseless motion, and thus exhibit a scene of brilliancy a humble transcript of that observable in the tropic regions to which the author of the memoir adverts. We are quite aware that it is not the Lampyrides alone that enliven with their "living fires" the evening sylvan scenery of the West India islands, for there are other insects which possess the same property, and of which several kinds are distinctly well known.

each other, that produce by friction the sounds described. In each surface this part presents a kind of ocellar spot with an uneven face, in some parts elevated, in others depressed, and the elevations in one accord exactly and bed into the depressions of the other when they are not in action; and very little exertion, it appears, when they act against each other is sufficient to produce those astonishing sounds for which this insect is so eminently distinguished. Those characteristic organs of sound which the Rev. Mr. Guilding notices so fully, are not indeed to be considered as peculiar to this species; it is the distinctive mark of a natural tribe of the Locusta tribe, and which among modern systematists may be divided into several genera. We have long since published an account of two very curious species of this kind from the island of Ceylon, in our "Natural History of the insects of India," and we are well acquainted with others; but it must be allowed that Mr. Lansdown Guilding has described those organs and defined their use more fully than any of his predecessors. All insects, it may be presumed, possess the power of emitting sounds in a greater or less degree, and many are highly sonorous, but those sounds are by no means uniformly produced by the same means; they differ in this respect materially, and it is such material deviations, as in the present instance, that deserve particular attention.

The figures in the succeeding plate (123) represent the organs of sound, peculiar to the male insect, and which may be noticed in this place: that delineated on the left side is fig. 5, and on the opposite side is fig. 6, the description of which is thus given by Mr. Guilding in his manuscript.

"Crepitaculum (instrumentum soni) ocellus subdiaphanus ad basin elytrorum. Fig. 4, 5, 6. maris.

Fig. 5. Elytrum dextrum aversa fascie vix auctum.

Fig. 6. Elytrum sinistrum aversa fascii, *b* ossiculum serratum rigidum quo sonus concitatur." *

—"Dum mas sic feminam silentim ad nuptias vocat, hemelytri dextra ora cornea, (fig. 4. *a*) sub interno margine serrato (fig. 6. *b*.) baseos hemelytri sinistri colliditus: sonus que elytris (quod mirum) concavis reverberatur augetur. Dum qui escit basis elytri sinistri marginim baseos elytri dextri tegit."

The emission of this sound is no doubt intended in the great ordinance of nature to announce the presence of one sex to the other, and which it appears can be heard and understood by its mate at a considerable distance, and probably further off than any other of the insect race with which we were before acquainted. We have indeed in wandering through our European woods, distinguished the shrill sounds of *Gryllus viridissimus*, the *Large Green Locust*, at a distance very remote, but not assuredly at more than one fourth part of that at which the sounds of the Shock-shock of the West Indies can be discriminated.

The peculiarities of this species, Locusta Camellifolia, are very remarkable, and the two sexes differ so materially that but for the

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* This incurvate bone having a serrated, or rather a crenate line down its centre, and which it appears is so essential to be understood in order to comprehend the true structure of this organ, and the means by which it produces sound, may be readily distinguished in our plate by referring from the star along the dotted line, which points immediately to that remarkable osseous process.

observations of Mr. Guilding we should not have known distinctly that these two insects are the sexes of the same species: they scarcely accord in any respect, except in the great length of the antennæ, and which is indeed too considerable to escape immediate attention.

It being impossible to include the two sexes of this insect in the same plate, we should observe that the present figure is that of the female insect, the male sex is given in the next succeeding plate (123), and it should be added, that in the original drawings the antennæ are advanced forward; but as those insects, like the rest of their tribe, have the power of reclining the antennæ backwards as well as carrying them projecting in front, we have represented the antennæ in a reclining position, for the convenience of shewing the antennæ in their full extent, which would otherwise have been impracticable.

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ENTOMOLOGY.

PLATE CXXIII.

LOCUSTA CAMELLIFOLIA, *Mas.*

SHOCK-SHOCK LOCUST, *Male.*

HEMIPTERA, *Linn.*

ULONATA, *Fabr.*

GENERIC CHARACTER.

Head inflected, armed with jaws, feelers filiform: antennæ setaceous or filiform: wings four, deflected, convolute, the lower ones plaited: hind legs formed for leaping: claws double on all the feet. GRYLLUS, *Linn.*

* Antennæ setaceous: feelers unequal: male with an ocellate spot at the base of each wing-case: tail of the female armed with an ensiform projection. LOCUSTA, *Fabr.*

SPECIFIC CHARACTER

AND

SYNONYMS.

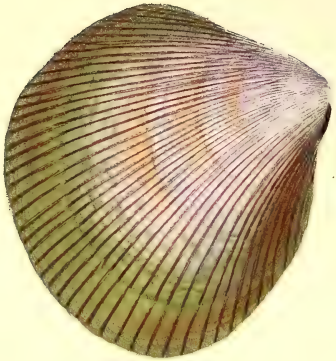
Thorax deflected, wing-cases concave, rounded at the end, and longer than the wings.

PLATE CXXIII.

LOCUSTA CAMELLIFOLIA: thorace deflexo, elytris concavis, apice rotundatis, alâ longioribus. *Fabr. Ent. Syst. t. 2. p. 35.—Spec. Ins. t. 2. p. 256.—Mant Ins.* 1. *p.* 232. *n.* 4.

GRYLLUS CAMELLIFOLIUS: *Gmel. Linn. Syst.* 2064. *p.* 96.

From the description of the preceding plate it will be observed, that the insect figured in the present instance is the male of Locusta Camellifolia; the history of the species, so far as we are acquainted with it, is so amply noticed in the preceding pages, that we have nothing to add on this subject in speaking of the male sex; we must beg leave to refer our readers to the description of the foregoing plate, observing only, that the organs of sound in this species, which constitute the most essential point of its history as they appertain to the male, will be found delineated in the plate now before us



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CONCHOLOGY.

PLATE CXXIV.

CARDIUM RACKETTII

RACKETT'S COCKLE

Bivalve.

GENERIC CHARACTER.

Shell bivalve, nearly equilateral, equivalve, generally convex, longitudinally ribbed, striated, or grooved, with a toothed margin: hinge with two teeth near the beak, and a larger remote lateral one each side, each fitting into the opposite hinge.

Shell somewhat cordate, or heart-shaped, thin, whitish, with forty-seven obsoletely imbricated ribs.

Cardium Racketii: testa subcordata, tenui, albida, sulcis 47 obsolete recurvato imbricatis.

In one of our late numbers a new species of the Australasian Pectens was introduced to the attention of the public under the denomination of *Ostrea Matonii*, a compliment we were induced to

bestow on Dr. W. G. Maton, vice-president of the Linnæan Society, a gentleman to whom the science of Natural History generally, and that of Conchology in particular, is known to lie under considerable obligations, and precisely the same motive inclines us in the present instance to commemorate the name of his very worthy friend, the Rev. Thomas Rackett, F. R. S. L. S. &c. in a similar manner. The names of Dr. Maton and Mr. Rackett are associated together as the well known coadjutors in the authorship of a very valuable paper on the subject of British Conchology inserted in the eighth volume of the Transactions of the Linnæan Society; it would therefore be injustice, to have distinguished one of its writers, without awarding an equal testimony of our respect towards the other; and this especially, since both, we are persuaded, have deserved equally well in the completion of those conchological observations that have appeared under their names conjointly.

The shell denominated Ostrea Matonii, although perfectly distinct from any species found in the British, or even European seas, bears a distant resemblance in certain particular characters to several of the British species: the same may be said precisely of the shell now before us, and which, as well as the former, is a native of the Australasian seas; it is for this reason, as in the preceding instance, that the species is selected, the shells of the British Isles having been the peculiar objects of investigation in the conchological paper referred to. Our present shell is undoubtedly an interesting addition to the cabinet of the European naturalist, and persuaded as we are that it has not been before described, we shall venture to announce it as a new discovery, under the name of Cardium Rackettii.

To define the distinction of this shell from any of those peculiar to Europe, and which are found in the seas surrounding our coasts, it may be observed that it is as large as the ordinary growth of *Cardium Echinatum*, or rather more than one third of *Cardium Aculeatum*; it has the contour of the former very exactly, but the ribs are far more numerous, amounting to forty seven in number, while in *C. Echinatum* they scarcely exceed *eighteen*, or in *Aculeatum* about *twenty*; the ribs are neither raised into acute ridges, nor beset with spinous processes; they are only slightly elevated, rounded, and somewhat rough with obsolete recurvate transverse imbrications, as in the Common Cockle, Cardium Edulis. Cardium lævigatum, when very young, may be considered as one of the most thin and fragile of the British species of this family, but these are scarcely thinner in that early state of growth than our Cardium Rackettii when it has attained the full dimensions of the example represented in the annexed plate. The outline of Cardium Lævigatum, it may be added, also is much more elongated and oblique, or cuneated, and it may be unnecessary to pursue the comparison further, since there is still less accordance between the other British species and our present shell than is observable in those we have already mentioned.

This new species of Cardium was received last year from New South Wales, where it was found with many other interesting objects now in our possession by Mr. Humphrey, resident in that colony.

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ENTOMOLOGY.

PLATE CXXV.

PAPILIO CLYTEMNESTRA

CLYTEMNESTRA BUTTERFLY

Lepidoptera.

GENERIC CHARACTER.

Antennæ thicker towards the tips and usually terminating in a club: wings erect when at rest. Fly by day.

* Nymphales.

SPECIFIC CHARACTER

AND

SYNONYMS.

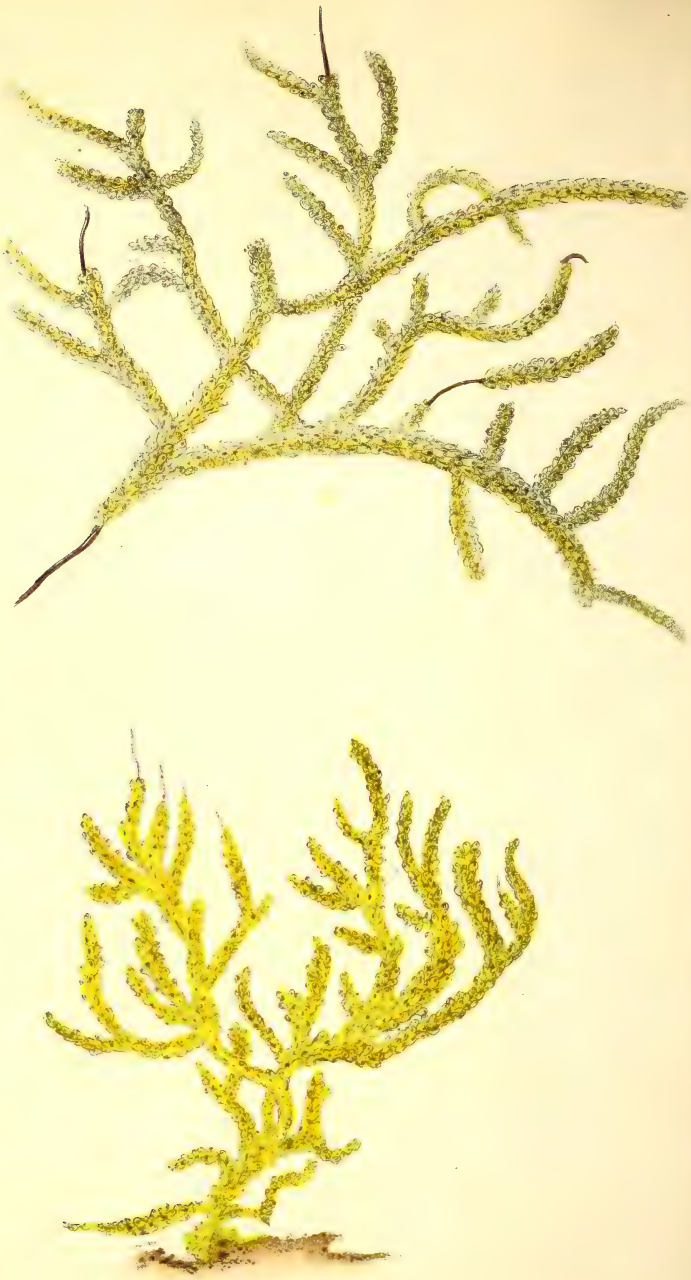
Wings angular, black, beneath spotted with white; upper pair with a yellow band above and beneath.

Papilio Clytemnestra: alis angulatis nigris subtus albo maculatis; anticis utrinque fascia flava. *Fabr. Ent. Syst. t.* 3. *p.* 1. *n.* 123. 375.

Papilio Clytemnestra: *Cram. Ins. t.* 137 *fig.* A. B. —*et. t.* 364. *fig.* A. B.

PLATE CXXV.

An insect of considerable beauty found in Surinam. The upper surface is dark brown, with a broad band of pale yellowish white across the middle of the anterior wings. Beneath, the prevailing colour is chesnut, very prettily varied with shades and spots of black, and a few irregular patches of silvery white; but the most obvious character beneath, is the broad yellowish white band, which appears as well on the lower as on the superior surface.



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ZOOPHYTES.

PLATE CXXVI.

GORGONIA SULPHUREA

SULPHUR-COLOURED GORGONIA

Zoophytes.

GENERIC CHARACTER.

Animal growing in the form of a plant, stem coriaceous, corky, woody, horny, bony or testaceous, composed of glassy fibres or like stones, striate, tapering, dilated at the base, covered with a vascular or cellular flesh or bark, and becoming spongy and friable when dry. Mouths covering the surface of the stem polypiferous.

SPECIFIC CHARACTER.

Entirely yellow, subdichotomous, much branched; florets crowded, somewhat conic, and gaping.

Gorgonia Sulphurea : flava tota subdichotoma, ramossissima, floribus confertis subconicis hiantibus.

A native of the Brasilian sea, where it was discovered some years ago by an assiduous and intelligent collector of Natural

History, Mr. Ribello, by whom it was brought to England, and communicated with many other very curious species of the Gorgonia tribe to Mr. George Humphrey; and which at the dispersion of his collection have fallen into our possession.

From every attention we have bestowed upon the subject this particular kind appears to be of a new species. We cannot perceive that it is included among the Gorgoniæ of Mr. Ellis and Dr. Solander, nor does it exactly correspond with any of the Gmelinian species; perhaps its characters assimilate with those of Gorgonia succinea of Pallas, or, judging from the description only, it might be mistaken for the Gorgonia verrucosa of our own seas, but the difference will be at once perceived when we have the opportunity of comparing the two kinds together.

Among the specimens of our present species we possess two varieties, which are pretty distinctly marked as such by their appearance, one having the branches rather longer than the other. This elongated kind is represented in the upper part of the plate; the other, it will be observed, is more dwarf or shrubby, and has the branches shorter and more numerous. The difference in colour is rather less material; the first is of a paler hue, and has probably in some degree faded in colour, the other retains the lively tints of a sulphureous hue, which is most probably the true colour of this Gorgonia in a living state; this we at least conclude from the name *Sulphurea*, assigned to it by Mr. Ribello, and still remaining in his hand-writing attached to the specimens.

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PLATE CXXVII.

MADREPORA ANTHOPHYLLITES

ANTHOPHYLLITE MADEPORE

CORAL.

ZOOPHYTES.

GENERIC CHARACTER.

Coral, with lamellate star-shaped cavities.

* Stems simple, and either solitary or fasciculate.

SPECIFIC CHARACTER

AND

SYNONYMS.

Fasciculated, branches elongate, infundibuliform, attenuated below and erect: star terminal, hemispherical and concave.

MADREPORA ANTHOPHYLLITES: fasciculata, ramis elongatis, infundibuliformibus, infernè attenuatis, erectis; stella terminali hemisphærica concava.

MADREPORA ANTHOPHYLLITES: *Ellis and Soland. t.* 29. *p.* 151.

CARYOPHYLLIA ANTHOPHYLLUM: *Lamarck Anim. sans Vert. t.* 2. *p.* 228. 9.

PLATE CXXVII.

This curious species of the Coral tribe is an inhabitant generally of the Indian seas, where it occurs in clusters, sometimes of considerable magnitude; that which we have represented is a small specimen, but which is amply sufficient in this respect to exemplify the peculiar character. It need be scarcely added, that although this species is found most commonly in small groups, it constitutes one of those numerous coralloid bodies, which by their aggregation form the submarine coral reefs or islands in the Indian seas so often the cause of shipwrecks, by emerging unexpectedly towards the surface; and the growth of which is frequently so rapid and extensive as to prove fatal to the best informed. The animal is a kind of polypiferous creature, and is furnished with eight plumose tentacula or feelers.

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ORNITHOLOGY.

PLATE CXXVIII.

MEROPS NUBICUS

NUBIAN BEE-EATER

PICÆ.

GENERIC CHARACTER.

Bill curved, quadrangular, compressed carinated, pointed: nostrils small, at the base of the bill: tongue slender, the tip generally jagged: feet gressorial.

SPECIFIC CHARACTER

AND

SYNONYMS.

Red, head, throat, and rump blue green; tail somewhat forked.

MEROPS NUBICUS: ex ceruleo viridis subtus ruber, dorso, alis caudaque furcata lateritiis. *Gmel. Linn. Syst. Nat. t.* 1. *p.* 464. 14.

MEROPS CÆRULEOCEPHALUS: ruber capite gulo, uropygioque cæruleo-viridis, cauda subforcipata. *Lath. Ind. Orn.* 1. 274. 14.

BLUE-HEADED BEE-EATER: *Lath. Syn.* 11. *p.* 680. 13.

PLATE CXXVIII.

This beautiful bird is a native of Nubia, where it appears to have been discovered by the intrepid and intelligent traveller Mr. Bruce, who has left us a particular and very accurate description of the species in the narrative of his Travels. The length of this bird is about ten inches, and its general appearance is sufficiently expressed in the specific character given by Dr. Latham, Gmelin, and others. The head, throat and rump are of a fine green, inclining to blue: the back, wings, and tail, a deep but not very brilliant red, the tint partaking of a dark or ruddy purplish hue; the breast and belly are also reddish, but more inclining to rosy. The bill is black, and the legs cinereous.

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ENTOMOLOGY.

PLATE CXXIX.

PAPILIO SYLVESTER

SYLVESTER BUTTERFLY

Lepidoptera.

GENERIC CHARACTER.

Antennæ thicker towards the tip, and usually terminating in a club: wings erect when at rest. Fly by day.

Dan. Fest.

SPECIFIC CHARACTER.

Wings entire brown, with a macular white band.

Papilio Sylvester: alis integerrimis fuscis: fascia maculari alba. *Fabr. Ent. Syst. t. 3. p.* 1. *n.* 41. 124. *Jon. fig. pict.* 3. *t.* 67. *f.* 2.

Papilio Sylvester is an insect of conspicuous size, and by no means a common species. Its general aspect is not like many of its tribe, distinguished by any peculiarities of gay or splendid colouring;

the prevailing tint is brown, but which is elegantly relieved by a number of oblong spots of white, disposed with much symmetry, especially upon the superior surface of the posterior wings, where they form a band composed of double white spots.

The present figures, which represent as well the upper as the lower surface of Papilio Sylvester will be esteemed of some importance in the consideration of the entomologist when he is reminded that this is one of the Fabrician species of the Papiliones long since described, but of which no figure has hitherto appeared in the work of any author; and, it may be added, that the figures are copied from the original insect described by Fabricius, in the cabinet of the late Wm. Jones, Esq. of Chelsea.

The native country of this insect was unknown to Fabricius, nor are we yet entirely certain on this point; we believe it is from India. Mr. Jones was not himself acquainted with this particular.

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ENTOMOLOGY.

PLATE CXXX.

PAPILIO LAODOCUS

LAODOCUS BUTTERFLY

LEPIDOPTERA.

GENERIC CHARACTER.

Antennæ thicker towards the tip, and usually terminating in a club: wings erect when at rest. Fly by day.

EQUITES TROJANI.

SPECIFIC CHARACTER AND SYNONYMS.

Wings indented, tailed, black: on the anterior wings an abbreviated yellow band: posterior pair beneath with rufous, blue and white lunules.

PAPILIO LAODOCUS: alis dentato caudatis nigris: anticis fascia abbreviata flava, postisis subtus lunulis rufis cœruleis albisque. *Fabr. Ent. Syst. t.* 3. *p.* 8. *n.* 23. *Jon. fig. pict.* 1. *tab.* 66.

In a former plate of this work our readers may observe a large and very fine species of the Butterfly tribe, an affinity of the species which constitutes the subject of the present plate. The insect

referred to is Papilio Acamas, one of the many very beautiful insects which had been described by Fabricius from the drawings of Mr. Jones and of which no other figure is extant, with the exception of that in our publication. At the time we were describing Papilio Acamas, it was mentioned that another insect, Papilio Laodocus of Fabricius and of the drawings of Mr. Jones, was to be considered as a near approximation of that species, and that the difference consisted chiefly in the disposition and colour of the spots, and some other more minute particulars. We are now induced to insert Papilio Laodocus in this place in order to leave nothing unexplained as to the precise distinction of these two very remarkable and analogous Papiliones.

Upon due comparison of these two figures and their respective descriptions, which we have now given, it will be perceived that there is a large and broad yellow band in the middle of the anterior wing in Papilio Acamas, and that although Papilio Laodocus has a yellow band in the same place, it is much smaller and abbreviated, and that the series of spots which constitute a characteristic feature of considerable beauty in the border of the posterior wings are red, blue and yellow in P. Acamas, while in P. Laodocus they are rufous, blue and white. Some little difference in their form will also become obvious upon comparing the two figures with each other; and lastly, it should be mentioned, that the body in P. Acamas is brown above and pale beneath, while in P. Laodocus the body is black with a white line down each side.

Papilio Laodocus is a native of Brasil, and appears to be the same as the Papilio Glaucus of Cramer. The former insect P. Acamas is from Jamaica.

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CONCHOLOGY.

PLATE CXXXI.

TURBO ZEBRA

ZEBRA TURBO

UNIVALVE.

GENERIC CHARACTER.

Shell spiral, solid : aperture contracted, orbicular, entire.

SPECIFIC CHARACTER.

Shell ovate-acute, striated transversely, yellow-orange fasciated with dark brown, the bands flexuose, oblique, uniform.

TURBO ZEBRA : testa ovato-acuto, transversim striata, flavo-aurantia fusco fasciata, fasciis flexuosa obliquis uniformibus.

So little are we acquainted with the testaceous varieties of the seas of South America that we cannot be surprised at the earnestness

with which those productions are sought after, now that a more liberal policy of the ruling powers of that extensive portion of the globe affords the opportunity of enriching our collections with them. The shell of which the description and figure is now submitted to the reader, is one among the number of those recent acquisitions which have been lately obtained from the seas in the vicinity of Panama; it is found in the same localities as the "pearl fish" as they are called, that is, the Mytilus Margaritiferus, or Pearl-bearing Muscle, and has been brought up with those pearl shells from the same beds.

This curious shell, which is of a somewhat rude appearance, is of a yellowish orange colour, with oblique and slightly flexuous waves of a rich chocolate brown, glossed with a deep purplish hue in some particular inflections of the light. Those stripes are not exactly perpendicular; they traverse the whole shell in a curved direction, but which however run uniformly parallel to each other. The general disposition of those fuscous bands upon a yellowish ground are not inaptly considered as bearing some resemblance to the fasciated pencilling, if it may be so expressed, of that elegant and well known quadruped, the Common Zebra, and in reference to which Mrs. Mawe, who first received the species from South America, assigned it the expressive name of Turbo Zebra.

We have seen one example of this shell in the possession of an eminent collector, Mr. George Humphreys, that had been communicated from South America by another hand, but we are assured that the English cabinets generally have been supplied with this interesting shell by Mrs. Mawe, and under the appellation already mentioned.

Although we have every reason for believing this shell to be perfectly undescribed, we should not pass silently over another shell which bears a near approximation in the general aspect, at least of its dorsal surface, but which from the structure of the mouth is obviously distinct; we allude to the *Purpura bicostalis* of Lamarck, the mouth of which is not rounded and entire as in Turbo Zebra: it is somewhat produced, or beaked, and being furnished at the base of the mouth with a short canal or groove, belongs in reality, in the Linnæan arrangement, to the genus Buccinum.

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CONCHOLOGY.

PLATE CXXXII.

HELIX HÆMASTOMA

HÆMASTOME HELIX

OR

WHITE-BANDED INDIAN SNAIL

UNIVALVE.

GENERIC CHARACTER.

Shell univalve, spiral, somewhat diaphanous brittle: aperture semilunar or roundish.

SPECIFIC CHARACTER

AND

SYNONYMS.

Shell imperforate globose-conic, ventricose, fuscous, with a longitudinal white band; pillar and lip purple.

HELIX HÆMASTOMA: testa imperforata globoso-conoidea, ventricosa fusca: fascia longitudinali alba: columella labroque purpureis.

HELIX HÆMASTOMA: testa imperforata subrotunda fusca: fascia longitudinali alba, apertura purpurea. *Linn. Mus. Lud. Ulr.* 671. *n.* 377.—*Gmel. Syst. Nat. t.* 1. *p.* 6. 3649. *n.* 112.

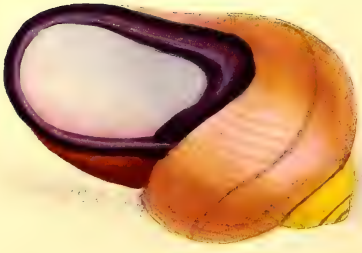
PLATE CXXXII.

HELIX HÆMASTOMA : testa globoso-conoidea, ventricosa imperforata, rufo-castanea inferne albo-zonata ; apice roseo, apertura latere dilitata : fundo albo ; columellæ labroque purpureis. *Lamarck Anim. sans Vert. t.* 6. *p.* 2. *n.* 70.

A native of Ceylon. This is a very fine and rare species of the Helix tribe, and not less remarkable for the beauty than singularity of its appearance. The prevailing colour is dark fuscous brown, but inclining to testaceous on the spire, and at the base.

The greater wreath of the shell is surrounded by a broad white band, and which is so situated, that when the shell lies in such a situation that the brown space and band surrounding the umbilical region is concealed, suggests the idea of the greater whorl being half brown and half white, the brown occupying the space from the anfractal line of the spire down to the middle, and the basal half pure white, the two colours meeting and forming a distinct line round the centre of the convexity. The rich crimson hue of the pillar and the lip of the aperture is very fine when those shells are in good condition.

It should be distinctly understood, that this is the Helix hæmastoma of Linnæus, and not of Chemnitz; this last mentioned author appears to have mistaken another shell, the Helix Melanotragus of Born and Daubenton for the Linnæan Helix Hæmastoma, and described it accordingly. As this species of Chemnitz bears rather a close affinity to the Linnæan shell in the opinion of some conchologists, we shall introduce it to notice in the ensuing plate, and the reader will be thus enabled to perceive the distinctions that prevail between these two shells.



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CONCHOLOGY.

PLATE CXXXIII.

HELIX MELANOTRAGUS

BLACK-MOUTHED INDIAN SNAIL

Univalve.

GENERIC CHARACTER.

Shell univalve, spiral, somewhat diaphanous, brittle: aperture semilunar or roundish.

SPECIFIC CHARACTER

AND

SYNONYMS.

Shell globose-conoidal ventricose, imperforate, chesnut-brown beneath, zoned with white: tip pale yellow: aperture transverse, pillar and lip black.

Helix Melanotragus: testa globoso-conoidea; ventricosa, imperforata, castaneo-fusca, inferne albo zonata, apice luteo; apertura transversa, columella labroque nigris.

Helix Melanotragus. *Born Mus. p.* 388.

Helix Hæmastoma. *Chemnitz Conch.* 9. 1. *t.* 130. *f.* 1152. 1153.

Helix Senegalensis. *Encyclopedie Fr.* 462. 4. *a. b.*

Helix Melanotragus. *Dauben. Hist. Moll. pl.* 52. *f.* 4. 5. 6.

Helix Melanotragus, Helice bouc-noir. *Lamarck An. sans Vert. t.* 6. *p.* 2. 70. 17.

PLATE CXXXIII.

In conformity with our annunciation in the last number, we now insert three illustrative figures of that very choice testaceous production Helix Melanotragus, the Black-mouthed Helix of India. Those figures are intended to represent the shell in three different positions, in order to convey a more distinct idea of the species than could possibly be given by a single figure in any point of view.

The representations of this curious shell cannot fail to prove an interesting addition to that of Helix Hæmastoma, the subject of the preceding plate (132), since those two shells have been not unfrequently confounded with each other; and that even by conchologists of no mean repute. Linnæus had described the first of those two shells under the specific name of Hæmastoma, and subsequent writers, unwilling to separate a shell so nearly allied as the Helix Melanotragus appeared to be, were induced rather to consider it as the same species, or merely as a variety, than occasion error by describing them as two distinct shells. Lamarck, one of the latest writers on this subject, allows the close affinity of those shells, observing, however, that they must be specifically distinct. His reason for entertaining this opinion is founded upon their difference in form and also in colour, in which particulars, when attentively considered, they are perceived to be dissimilar. Both are of a globose-conic or conoidal form, and both are remarkably ventricose or swollen in the first or greater whorl of the spire, but this ventricosity is most striking in Helix Melanotragus, and in this shell it is observed also, that the spire is rather more produced or pointed than in Helix Hæmastoma: the extreme whorls of the spire in Helix Hæmastoma, moreover, are of a rosy hue, while in the shell before us the colour is pale yellow.

In addition to these circumstances it may be observed, that although the shell is now rare, and bears a considerable price, it has, of late years, become rather more usual in fine collections than its rarity might lead us to expect. The time is within our memory, when a fine example of Helix Hæmastoma passed for a species almost unique, and realized at a public sale the price of twenty guineas; the value of the shell was subsequently depreciated by the appearance of three or four more specimens in the hands of our collectors, and might then be estimated at about twelve guineas each; within the last twenty years the price has again fallen progressively to less than half that amount, a circumstance not a little accelerated by our possession of the island of Ceylon, the country from whence those beautiful shells are received. But although those two shells, as well the Helix Hæmastoma as Helix Melanotragus, have hence appeared more frequently in our collections than in former days, they are still held in much esteem for their rarity; their appearance is confessedly striking in a peculiar degree; the rich coloration of both, but that of H. Hæmastoma in particular, render them objects of more than usual interest, and almost indispensable indeed as a cabinet acquisition among the Helices.

As a general observation respecting these two very analogous shells, it may be stated, that the size of the species Melanotragus, now before us, rather exceeds that of Hæmastoma; the colour is of a pale brown, or testaceous hue, instead of a deep chocolate colour, and the appearance of a white zone encircling, or rather forming the lower half of the whorl, with the exception of the umbilical region, is by no means so distinctly obvious as in Hæmastoma: it is indeed, as we have observed, in some examples wholly wanting, the centre of the wreath being marked only by a spiral line of separation.

Those prevailing distinctions may with propriety be considered as sufficiently indicative of two distinct species ; but if any further proof were wanting to establish their dissimilitude, the structure and the colour of the aperture of the mouth of the shell, would afford us all the character required ; the pillar, as well as the lip of H. Hæmastoma being of a rich crimson colour, and thus forming a deep red border round the mouth, while that of Melanotragus is purplish, verging to an intense black in the darker shades ; or in other words, has the mouth bordered with black instead of red. The inside of the shell is white.

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ENTOMOLOGY.

PLATE CXXXIV.

HESPERIA TACITUS

TACITUS BUTTERFLY

LEPIDOPTERA.

GENERIC CHARACTER.

Antennæ thicker towards the tip and usually terminating in a club: wings erect when at rest. Fly by day.

Pleb. rurales, *Linn.* Hesperia rurales, *Fabr.*

SPECIFIC CHARACTER

AND

SYNONYMS.

Wings entire, fulvous: exterior margin of the upper pair black, with yellow spots.

HESPERIA TACITUS: alis integerrimis fulvis: anticis margine exteriori atro flavo maculato. *Fabr. Ent. Syst. t. 3. p. 1. 308. 168.*

PAPILIO TACITUS: *Jon. fig. pict. 6. tab. 46. f. 3.*

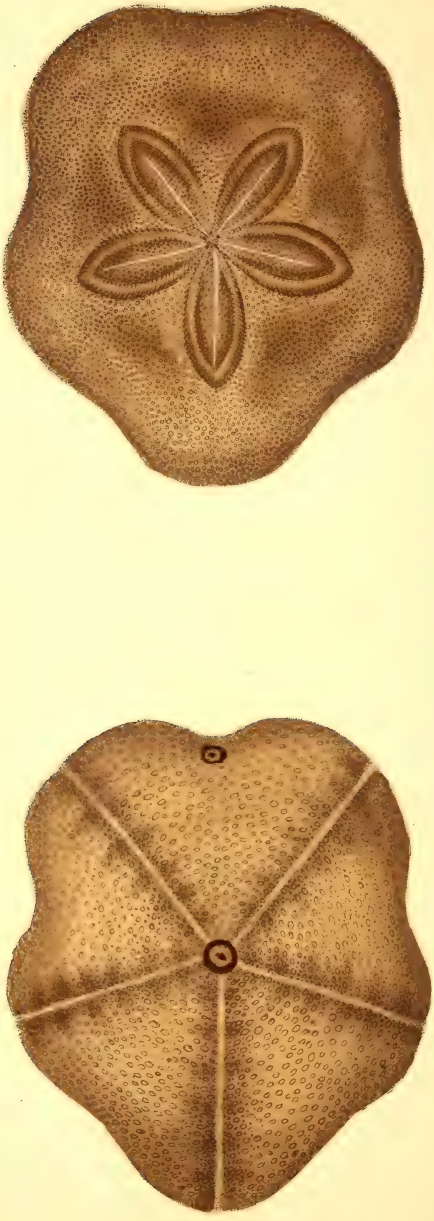
PLATE CXXXIV.

Papilio Tacitus is one of the Fabrician species described from the drawings of Mr. Jones, to which we have had such frequent occasion to refer in our endeavours to illustrate the Fabrician writings on the science of Entomology; and as it is from that invaluable collection that the figures in the annexed plate are copied, they may be regarded as the identical delineations which Fabricius has described. The original specimen (for the two figures represent the upper and lower surface of the same insect) from which the drawings of Mr. Jones were taken, was, at that time, in the rich cabinet of Mr. Drury, but the subsequent dispersion of that fine collection by public auction, after the death of its much respected proprietor, must render it a matter of some difficulty at this period to determine into whose hands the species passed, or whether it be now extant or lost. A very considerable portion of the extra European insects of that collection, and the whole, without exception, of the British insects, became our own property at the time of sale; but Papilio Tacitus was not among the number: the specimen was, however, familiar to our recollection while it remained in the cabinet of Mr. Drury, and such was the accuracy of the drawings of Mr. Jones, that we were perfectly satisfied with the representations: if we had conceived they could be improved, we should certainly have taken other figures from the original specimen, the collection of Mr. Drury having been ever open to our service, and with the utmost liberality, during the life time of its venerable possessor.

It should be observed, that a figure of this insect is given in the third volume of Mr. Drury's Exotic Insects; he was not aware, however, at the time that plate appeared, of its being previously described by Fabricius from the drawings of Mr. Jones, which he had

permitted to be taken; and for this reason it appears under another name; he calls it Papilio Menetas, under the persuasion of its being a non-descript, and by this means the same insect, even to the present day, appears as two distinct species, and is recorded as such in all the entomological nomenclatures. Our observations will be the means of pointing out this error, and correcting it.

Papilio Tacitus is a small species of remarkable and peculiar character, and must be regarded as a very pleasing example of that tribe of Papiliones to which Fabricius has assigned the generic name *Hesperia*. It is described as a native of Surinam by Fabricius; from the manuscripts of Mr. Drury, now in our possession, it appears, however, that he did not receive it from that country: his note on the species states that it is a native of "Brazil," and that it was communicated by "*Mr. Bonifas, in the year* 1776." The specimen was numbered 670 of his cabinet. He had another very analogous insect, No. 657, which he received also from Brazil, and from the same correspondent. Our readers will recollect that Surinam lies North of the equinoctial line, and Brazil to the South; and that the distance between those places must be regarded as considerable, especially in determining the locality of the species.



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VERMIOLOGY.

PLATE CXXXV.

ECHINUS SUBDEPRESSUS

SUBDEPRESSED ECHINUS

VERM. MOLLUSCA

GENERIC CHARACTER.

Body roundish, covered with a bony sutured crust, and generally furnished with moveable spires: mouth placed beneath, consisting usually of five valves.

* Base irregular, with five extended petal-shaped marks on the surface.

† Margin with angular sinuosities.

SPECIFIC CHARACTER

AND

SYNONYMS.

Ovate-elliptic: back slightly convex, sides somewhat sinuous, avenues ovate-oblong pulvinate: vent near the margin.

PLATE CXXXV.

ECHINUS SUBDEPRESSUS : ovato-elliptica, dorso convexiuscula ; lateribus subsinuosis; ambulacris ovato-oblongis, pulvinatis ; ano margini vicino.

SCUTELLA AMBIGENA, Scutelle ambigène. *Lamarck An. sans Vert. 3. p.* 12.

ECHINUS ROSACEUS *var* δ. *Gmel. T.* 1. *p.* 6. 3187.

This curious species of the depressed kinds of the Linnæan genus Echinus, is nearly allied in its general appearance to his *Echinus rosaceus*, a species not uncommon, and which must be therefore generally known.

The Echinus now before us is one of those which has been described by authors as the presumed varieties of the species, *rosaceus*, all which, in a greater or less degree, appear to us materially different; the kind at present under our consideration, we cannot in particular avoid believing to be specifically distinct. Lamarck has already admitted this; that author has indeed so far separated those two analogous species as to refer them to different genera; the kind before us is his *Scutella ambigena;* and the Linnean Echinus rosaceus, hitherto regarded as the type of the species constitutes with him the first species of his following genus *Clypeaster*. Lamarck observes that the present species approaches very nearly to the Clypeasters, and we cannot but conceive that where the distinctions approximate so nearly, the differences ought scarcely

to be regarded as sufficient to form generical distinctions. We have no hesitation, however, in admitting our present species to be distinct from the Echinus rosaceus, and under that persuasion have given it as another species, under the name of *subdepressus;* it is certainly less convex than Echinus rosaceus, and the greater or lesser elevation of the dorsal disk appears to form one of the most striking characters of the respective varieties of E. rosaceus as they have hitherto been considered.

The genus Scutella of Lamarck is evidently founded on the *Scuta* division of Klein and *Echinathi* of Leske, and in the works of both those writers the Echinus rosaceus constitutes the most conspicuous species; we really think they should have both been placed in the same genus, that is, either in Scutella or Clypeaster.

The native place of our present kind, Echinus subdepressus, is unknown; it is believed to be a native of the Asiatic seas, like Echinus rosaceus. We apprehend, from the rarity of its occurrence, that the species cannot be common, or that at least it must be local. Lamarck was unacquainted with its habitat.

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ENTOMOLOGY.

PLATE CXXXVI.

PAPILIO CASSANDER

CASSANDER BUTTERFLY

Lepidoptera.

GENERIC CHARACTER.

Antennæ thicker towards the tip and generally terminating in a knob : wings erect when at rest. Fly by day.

SPECIFIC CHARACTER AND SYNONYMS.

* Pleb. Urb. *Linn.* Hesperia Urb. *Fabr.*

Wings without tails, above and beneath fuscous and immaculate.

Hesperia Cassander : alis ecaudatis concoloribus fuscis immaculatis. *Fabr. Ent. Syst. t.* 3. *p.* 1. 337.

Papilio Cassander : *Jon*: *fig. pict.* 6. *tab.* 24. *f.* 1.

Papilio Cassander is one among the number of those obscure species of the Butterfly tribe, the iconical illustration of which be-

comes important in the present state of science, from the circumstance of its description having been long before the eye of the scientific reader in the writings of Fabricius, but unaccompanied with a reference to the work of any author in which the figure is to be met with: the truth is, there is no figure of the species extant, nor any description except those derived from his labours.

Fabricius describes P. Cassander as resembling P. Thrax, except in being larger, and entirely destitute of those transparent spots which appear conspicuous in the wings of that species. The Papilio Thrax of Fabricius has appeared already in our publication on the "Insects of India," and will be found, on comparison with the insect now before us, to be very different, notwithstanding its presumed assimilation.

In treating upon a species so confessedly ambiguous, and so little calculated from its general aspect to afford any very decisive character, it must be satisfactory to our readers to be informed that the figures are immediate copies from the drawings of Mr. Jones, the sole authority upon which the species is described by Fabricius.

The native place of Papilio Cassander remains unknown: the specimen figured by Mr. Jones was originally in the cabinet of Mr. Drury, but the species is not sufficiently identified in the manuscripts of that collector, now in our possession, to enable us to speak precisely in this particular. The species of this family are known to be very numerous, and to comprehend many kinds from every part of the globe: they fly in the day-time, among the most stunted herbage, and in places the least concealed from common observation.

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PLATE CXXXVII.

MEROPS BULLOCKII

SCARLET-THROATED, OR BULLOCK'S BEE-EATER

PICÆ.

GENERIC CHARACTER.

Bill curved, quadrangular, compressed, carinated, pointed: nostrils small, and at the base of the bill: tongue slender, the tip generally jagged: feet gressorial.

SPECIFIC CHARACTER.

Green, beneath yellowish fulvous: throat red, thighs and vent blue.

MEROPS BULLOCKII: viridis subtus flavescenti-fulva: gula rubra: femoribus crissoque cæruleis.

The genus Merops, the Bee-eater of the English ornithologists, is a tribe of very peculiar beauty; the family is by no means extensive: those at present known, amounting only to somewhat less than thirty species, exclusive of their respective varieties, but

within the limits of that number we find many kinds of more than usual elegance; most of them are birds of gay and lively coloured plumage, and some even are remarkable for their splendour. The example of the genus now before us is one of those which we conceive can scarcely fail to arrest attention in this respect; the prevailing colour of the plumage is a vivid green of very pleasing hue, contrasted with other colours of still more decided brilliancy, and those so disposed as to form in the aggregate a picture of most striking and peculiar aspect. The length of this bird is about nine inches, its form and symmetry graceful; the bill long, slender, and of a blackish colour; the crown of the head is green; the throat of the purest carmine red with a blush of scarlet, and those two colours, the green and red, so finely contrasted, are divided into distinct spaces by a band of deep black passing backwards from the base of the bill through the region of the eye, towards the back of the head. The back, like the head, is of a fine green, but is glossed with vinaceous and tints of yellow: the wings are of lovely green, yet more vivid than the back, and the quill feathers at the extremities are fine blue. The breast partakes of the vinaceous hues of the dorsal region, below which the colour is buff inclining to fulvous, and this colour, somewhat paler, pervades the whole of the abdominal region down to the thighs and vent, which are of a rich mazarine blue, and in some specimens the colour of the lower region of the abdomen is divided from the blue colour of the thighs and vent by a line or bar of white. The rump and tail are green, the latter dashed at the exterior edge of each feather about the middle with orange. The legs are blackish.

The greater length of the bill and shortness of the legs are admirably well adapted to the habits of this tribe of birds; they

subsist on insects, and one of them was communicated to Lord Stanley, a nobleman of distinguished taste, and one whose attention to the science of natural history, in particular, are eminently calculated to deserve our praise. The species was shortly after introduced for the first time to the notice of the public in the museum of Mr. Bullock, where it attracted the remark of Professor J. C. Temminck, of Holland, an ornithologist of great merit, and who, in compliment to the proprietor of the collection, named it specifically *Bullockii*, or *Bullock's Bee-Eater*, an appellation by which it has been since distinguished by collectors in this country generally. Dr. Latham has published a minute description of this bird in the fourth volume of the last series of his work, under the title of the Scarlet throated Bee-eater, without any Latin name, but referring to the bird itself, at that period preserved in the museum of Mr. Bullock, and not being, as it appears, aware of the name assigned to it by M. Temminck. We have reason to believe, that the individual example now before us is that, which was named *Merops Bullockii* by Professor Temminck, or at least that it originally formed a part of that museum, and we are happy, in this place, to identify the name of this very beautiful species with that of the proprietor, as a testimony at least of our respect for his exertions in a public cause.

It may be finally worthy of remark, that this species of Bee-eater, the specimen of which we obtained at a considerable price not many months ago, being then esteemed a bird of more than usual rarity, has of late become abundant: it is a native of the interior of Senegal, a country till recently unexplored; an expedition was lately sent three or four hundred miles up the country, and among a great variety of other acquisitions to the science of ornithology, the result

has been the production of more than fifty specimens of this lovely species. The magnitude of this number must assuredly detract from its estimation as a rarity, but it will be the more highly prized as a beautiful acquisition, since every collector may be enabled to add it to his collection at a moderate expense.

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ZOOPHYTES.

PLATE CXXXVIII.

MILLEPORA ALCICORNIS

ELK'S-HORN CORAL

Zoophyta.

GENERIC CHARACTER.

Animal polype: coral mostly branched, pores turbinate and round.

SPECIFIC CHARACTER AND SYNONYMS.

Branches compressed, straight, with scattered obsolete pores.

Millepora Alcicornis: compressa recta, poris sparsis obsoletis. *Gmel. Linn. Syst. Nat. t.* 1. *p.* 6. 3782. *sp.* 1.

This remarkable kind of Millepore, or White Coral, is found in the Indian and South American seas in almost infinite abundance,

and in shapes and clusters the most grotesque and varied that it is possible for the imagination to conceive. The nature of this Coral is to form a kind of incrustation over other substances, and by that means to affix itself in the most secure manner to pieces of rocks and other substances under water, where it is least liable to injury, for it is of a brittle nature and easily broken. When situated in secure places, such as the deep waters under shelter of the rocks, and safe from the injury of the waves, it grows to a large size. The branches not uncommonly assuming a furcated appearance, that may be aptly compared to the antlers of the Elk, has obtained this species the trivial appellation of the Elk's-Horn Coral.

The colour of this kind of Coral varies from a pale yellow to white; when the white predominates, it is, however, an indication of a depauperated specimen, for in the living state the colour is more or less yellowish.

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ENTOMOLOGY.

PLATE CXXXIX.

MYRMELEON LIBELLULOIDES

CAPE MYRMELEON

OR

LION ANT

NEUROPTERA.

GENERIC CHARACTER.

Mouth with a horny acute mandible and jaw: feelers six: stemmata none: antennæ thicker at the tip: wings deflected: tail of the male armed with a forceps composed of two straight filaments.

SPECIFIC CHARACTER AND SYNONYMS.

Wings grey, with fuscous spots: body black and yellow varied.

PLATE CXXXIX.

MYRMELEON LIBELLULOIDES: alis griseis fusco maculatis, corpore nigro flavoque variegato. *Fabr. Spec. Ins.* 1. *p.* 308. *n.* 1.—*Fabr. Mant. Ins.* 1. *p.* 249. *n.* 1.—*Gmel. Linn. Syst. Nat. t.* 1. *p.* 5. 2642. 238. 1.

Hemerobius Libelluloides. *Linn. Mus. Lud. Ulr.* 401.

The present insect may be regarded as a remarkably perfect example of the Cape Myrmeleon, or Lion-Ant, long since named by Linnæus *Libelluloides,* or rather as a curious variety of the species, for it differs in some slight degree from other specimens that have fallen under our remark. The abdomen is usually of an uniform brown or testaceous hue, not yellow as in the subject now before us, and the lines of black, so conspicuous in the present specimen, are in some instances wholly wanting. Others have the black abdominal lines at the sides without the dorsal one. That delineated by Sulzer has the body brown without any dark lineations. Linnæus, indeed, speaks of the abdomen in this species being black and yellow spotted, but had the specimen he described been lineated with black upon a yellow ground, he would no doubt have expressed it otherwise. In the specimen under our consideration the legs are less hirsute, and the spots of the wings somewhat less conspicuous than usual; yet, notwithstanding these distinctions, we can consider it only as a probable variety of the species, or as an insect in a condition more perfect or in a better state of preservation than those which have occurred to the observation of the naturalists already mentioned.

The habits and manners of the Lion-Ants are extremely curious: they feed on other insects, the male only is furnished with wings; the female is apterous, or wingless. Like the species of the Libellula tribe, the male pursues and captures its prey upon the wing, as the hawk sometimes pounces on the smaller birds in flight, and seizes them before they fall upon the ground. The female lives in the sands and captures her prey by stratagem as well as force; first forming, with much ingenuity, a spacious hollow or bason-like cavity in the sands, she buries herself at the bottom, where she lies so completely concealed in her den, that only her forceps, a formidable pair of jaws, appear protruded above the surface. Thus secured from observation she lies in wait, and seizes with the celerity of the spider upon any insect that happens to crawl within the sandy hollow of her lurking place. But, what is yet more singular, should this wary and ferocious creature perceive any insect that had entered its hollow "glen" of sands, attempting to ascend, and thus escape the lurking danger, or should any one be incautiously resting upon the verge of the hollow, she immediately throws up a shower of sand upon it, to impede its escape, or hasten its downfal into the pit, and which once accomplished the devoted insect with all its efforts can scarcely avoid falling an easy prey to the ferocity of its foe, so emphatically denominated from its strength and courage the "Lion-Ant."

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ENTOMOLOGY.

PLATE CXL.

PAPILIO LATREILLII

LATREILLE'S BUTTERFLY

LEPIDOPTERA.

GENERIC CHARACTER.

Antennæ thicker towards the tips and usually terminating in a club: wings erect when at rest. Fly by day.

EQUITES TROJANI.

SPECIFIC CHARACTER.

Wings tailed, above and beneath black: posterior pair with a triple white spot, and red marginal lunules: head, thorax and abdomen black, varied with red.

PAPILIO LATREILLII: alis caudatis concoloribus nigris: posticis macula triplici alba, lunulis marginibus rubris: capite, thorace, abdomineque nigris rubro variegato.

In a former part of this undertaking it devolved on us to point out an oversight of some consequence to science that had attracted our observation in passing through the pages of the *Encyclopædie*

Methodique, now in a course of publication in Paris. The error alluded to is important chiefly, we must confess, to the Fabrician entomologist; but when we recollect the great, the invaluable character of the writings of Fabricius in this department of natural history, and the deserved celebrity attached to his labours, as well in every other country as in Germany, his place of birth and residence, we can scarcely deem our time misspent in endeavouring to afford them that elucidation which our industry and attention to science in earlier days have placed entirely in our power. The oversight adverted to is certainly one which every other author, as well as M. Goedart, might have committed, nor could we ourselves perhaps have been enabled to detect it with so much promptitude had we not possessed those documents of the Fabrician manuscripts which enable us to write with certainty upon the subject. The circumstance is this: the ingenious editor of the entomological department of the work alluded to, had named a species of the Papilio tribe, Papilio Latreillii, a compliment intended to commemorate the name of M. Latreille, a distinguished entomologist of the *Jardin des Plantes*, and the author of several interesting publications. M. Latreille in his visit to London a few years ago, had seen in the cabinet of the secretary of the Linnæan Society, Alexander MacLeay, Esq. this very beautiful insect of the Papiliones, the description of which he communicated to M. Goedart for publication, as a species presumed to be altogether new, and as such it was inserted in the work before mentioned, under the then unappropriated name of Papilio Latrellii; the name by which it was distinguished in the cabinet of Mr. MacLeay till we saw it there some time afterwards. The beauty of the species is sufficiently striking, and this in passing through the Papiliones of that splendid cabinet could not fail to attract

our notice; from a cursory glance we were, however, induced to believe its appearance was familiar to our recollection: and that it could not be a new species but one long before described by Fabricius; to determine this with due precision, Mr. MacLeay kindly favoured us with the loan of the specimen, and on comparing it with the drawings of Mr. Jones, to which Fabricius so uniformly refers, we could no longer entertain a doubt of the accuracy of our first conclusion; it proved to be the Papilio Tynderæus of that author, and is the insect described under that epithet throughout all the works in which he treats on that particular species *.

Thus it became of some importance to publish the figure of this species, which had not before appeared in the works of any author, together with such elucidatory observations as we deemed best calculated to correct the inadvertency. This was done accordingly in the 83rd plate of the present work; and it is now our object to fulfil the promise then made of transferring the name of Papilio Latreillii to some other species of acknowledged novelty that might yet remain undescribed. We believe it is within our means in the present instance to redeem the pledge then given; the insect now before us, one of the *Equites Trojani*, of very striking form, of singularity and beauty, we may venture to produce as a species not hitherto described or noticed by any author, and its characters, moreover, it may be added, are indeed so very peculiar that it cannot readily be confounded with any other known species. If, therefore, M. Latreille should be disposed to receive in compliment this tribute of our esteem, in

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* Fabr. Ent. Syst. t. 3. p. 1. n. 104. &c.

lieu of the already appropriated species Papilio Tynderæus, to which his name was before annexed, we shall be amply gratified in the opportunity the circumstance has afforded us of testifying our good-will towards that distinguished entomologist, and under the persuasion that it may prove acceptable, we shall venture to give publicity to this very fine and non-descript species under the appellation of Papilio Latreillii.

With respect to the history of this very interesting novelty, we are only enabled to state that it is a native of Nepaul in India, from whence it was received by Mr. MacLeay, and that it is to his friendship we are indebted for permission to make the species known.

The accuracy of the figures, it is presumed, must render any very minute description of this curious insect needless, and this the more especially since both the upper and the lower surface is represented in the annexed plate. A few observations may, however, perhaps be allowable, in order to point out those particulars in which it bears the nearest approximation in appearance to the species already known.

At the first view, it seems to bear a remote affinity to Papilio Hector, yet it will require no comparison to assure us of its decided specific difference; the elongation of the posterior wings, which more resemble those of Papilio Coon and some few other Papiliones, afford in particular a striking dissimilarity; neither is the singularly expanded trilobate space of white, in the disk of the posterior ones, a less conspicuous distinction of our new species Papilio Latreillii. The nearest approach in this respect to the insect before us is to be

observed in a Papilio denominated by the continental entomologists Papilio Hectorides, a fine and very striking object in the cabinet of M. Gerning of Frankfort, and of which we also possess an elegant example, a subject intended in our mind to appear in a future plate, in order to render the characters of Papilio Latreillii more explicit. The insect alluded to will be found, on comparison, materially different, notwithstandiug its similarity in this particular: the white spot on the under wings is placed considerably lower, in the present insect, being situated posterior to the middle of the disk, while in "Hectorides" it is central, or rather anterior to the middle. The insect is also altogether smaller, and besides having the red spots on the lower wings disposed in another manner, the first pair of wings are crossed in the middle with a white list or band, as well above as beneath, no trace of which is perceptible in Papilio Latreilli.

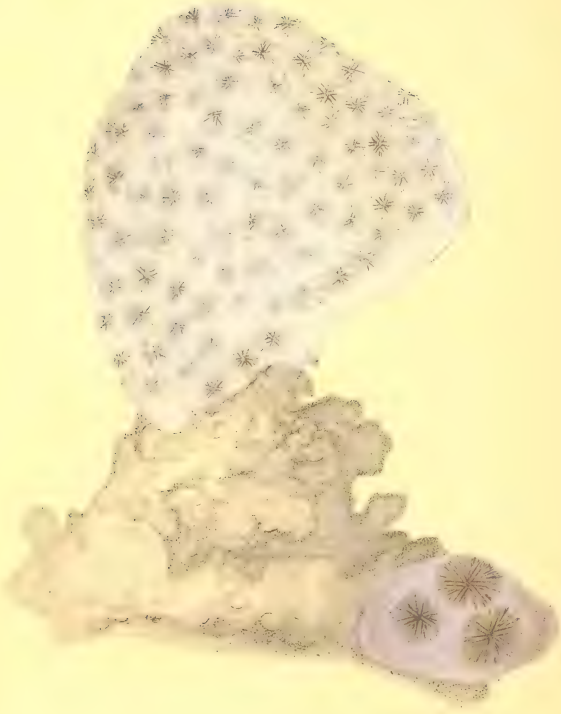

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PLATE CXLI.

MADREPORA SIDEREA

SIDEREAL, OR STARRY MADREPORE

Zoophytes.

GENERIC CHARACTER.

Coral with lamellate star-shaped cavities. Animal resembling a medusa. *Linn.*

* Aggregate, undivided, with distinct stars and porulous tuberculous prominent undulations.

SPECIFIC CHARACTER

AND

SYNONYMS.

With crowded, rounded, and subangular stars, the divisions thick, and rather convex: alternate gills nearly united at the margin: centres simple.

MADREPORA SIDEREA: stellis confertis rotundis subangulatisque: parietibus crassis convexiusculis, lamellis alternis margine subconnatis, centris simplicibus. *Soland. et Ellis Coral. p.* 168. *n.* 66. *t.* 49. *f.* 2. *Gmel. Syst. Nat. T.* 1. *p.* 6. 3765. 37.

PLATE CLXI.

The tribe of Madrepores in the Linnæan system comprehends many species, and, as may be presumed where the species are so numerous, although many of them may be of usual occurrence, and others even common, this is not uniformly the case : several of the genus are distinguished for their rarity. The species now before us, though not one of the rarer kinds, is so far scarce that its native place remained long unknown, nor are we even now entirely assured that it is correctly ascertained. Ellis, the author by whom it was originally described, knew nothing of its native place or history, and Gmelin, whose latin character is transcribed literally from Ellis, was equally uninformed upon this subject. We believe it is a native of the Indian seas ; one of its analogies, Madrepora Siderea, inhabits the seas of the West Indies.

All the species of this extensive tribe may be very readily distinguished by the size, form and disposition of the stellated figures or stars upon the surface, the mouths, if it may be so expressed, of the stelliform cells, in which the living animals of this aggregated group of habitations have their residence. The nearest analogies of Madrepora Siderea are Galaxea, Pleiades, and Hyades, all which may, however, be readily distinguished by their comparative dissimilarity in the size as well as form of the stars, and of those the M. Galaxea bears the nearest similitude, but in this the stars are much smaller and more numerous.

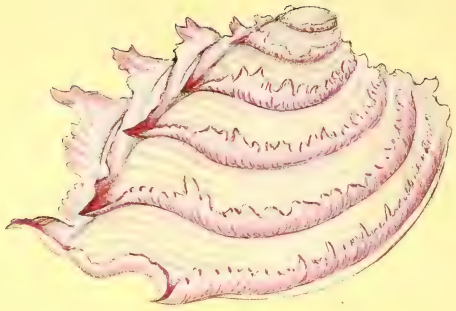

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PLATE CXLII.

VENUS LAMELLATA

LAMELLATED VENUS

Bivalve.

GENERIC CHARACTER.

Hinge furnished with three teeth, two near each other, the third divergent from the beaks.

SPECIFIC CHARACTER

AND

SYNONYMS.

Shell oval, front angulated, whitish, lamellous plates transverse and distant, appendiculate anteriorly : the upper surface striated.

Variety. Shell somewhat depressed, lamellous plates narrower and not appendiculate.

Venus Lamellata : testa ovali, anterius angulata, albidâ ; lamellis transversis, distantibus, antice appendiculatis, latere superiore striatis.

2 *Var.* testâ subdepressâ angustioribus, non appendiculatis. *Lamarck, t.* 5. *p.* 592. 28.

PLATE CLXII.

This very choice and curious shell which has been described by the French naturalists under the name of *Venus belles lames* and Venus lamellata, appears, upon the testimony of M. Lamarck, to have been brought from the seas of New Holland into Europe by M. Perron and Lesueur some years ago.

Without presuming to offer any observation upon the priority of claim which the naturalists of our own country may have to the credit of producing in the first instance this beautiful conchological production to the knowledge of Europe, it may be sufficient to state, that we have ourselves known this shell for some years in the cabinets of our collectors, and that it was at least known in Britain before the year 1818, the period in which the description of the shell appeared in the writings of Lamarck. And, further it should be added, that although it may perhaps admit of some dispute whether the naturalists of France were not acquainted with the species before those of Britain, the particular variety which we now produce is confessedly acknowledged by M. Lamarck himself to have been known to us while they were yet unacquainted with it ; this being one among the number of those conchological rarities for which that author was indebted to the liberal communications of our own countryman, Alexander Mac. Leay, Esq. and which he describes upon the sole authority of the example communicated to him by that gentleman *.

As the nature of the work of M. Lamarck admits of descriptions only, and those in language not altogether familiar at least to

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* La variété (2) vient aussi de la Nouvelle Hollande et m'a été communiquée par M. Macleay." T. 5. p. 593.

every English reader, it is presumed, a figure of the shell which M. Lamarck describes, can scarcely fail to prove acceptable; and this the more especially, since it may be added that our figures are expressly copied from the individual example described by M. Lamarck, the specimen having been kindly communicated to us by Mr. Mac. Leay for the purpose of our present publication.

The annexed figures, which exhibit as well the interior as the external appearance of this shell, may render any minute description of the species unnecessary. The shell is of a most delicate and fragile texture, of a rich and pleasing cream-coloured tint, inclining to rosy; but the most characteristic peculiarity of the shell consists in the fine transverse plates, or lamellate fringes, six in number, which project considerably and at nearly equal distances from the sides and front; those plates flow in graceful curves, bending somewhat semicircularly upwards along the sides, and projecting into elongated processes at the front. The colour pale roseate, tinged with deeper red towards the indented edges or fringe; the surface elegantly striated, and where they terminate in the anterior projections there is a pretty deep sulcation, or hollow, down the middle of the superior surface.

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ENTOMOLOGY.

PLATE CXLIII.

PAPILIO EPISTROPHUS

EPISTROPHUS BUTTERFLY

ORDER

LEPIDOPTERA.

GENERIC CHARACTER.

Antennæ thickest towards the tip, and usually terminating in a kind of club: wings erect when at rest. Fly by day.

* NYMPHALES.

SPECIFIC CHARACTER

AND

SYNONYMS.

Wings indented, cinereous, white: anterior pair black at the tips: posterior ones beneath, with a streak of yellow ocellate spots.

PAPILIO EPISTROPHUS: *Index Alphabeticus. Fabr. Ent. Syst.* *p.* 124.

PLATE CXLIII.

PAPILIO LAERTES : alis dentatis cinereo albis : anticis apice nigris, posticis subtus striga ocellorum flavorum. *Fabr. Ent. Syst. t.* 3. *p.* 1. 84. *n.* 262.

Papilio Laertes : *Drury Ins.* 3. *tab.* 15. *fig.* 1.

A magnificent species of the Papilio tribe, a native of South America, described by Fabricius from an example in the cabinet of Mr. Drury, under the name of P. Laertes, and by that name it was distinguished also in the third volume of the Exotic Entomology of Mr. Drury, plate 15, as above referred to. Subsequently to that publication, and after the completion of the Fabrician "Entomologia Systematica," the author of the latter work appears to have observed that he had two different species of the Nymphales tribe under the same name, the present species, No. 262, and the *Nymph. Laertes* of Cramer, No. 226. To obviate the confusion that would result from this two-fold nomenclature, he therefore changed the name of Mr. Drury's species, leaving that of Cramer under the name of Laertes originally assigned to it; the present species he altered to Epistrophus, one of the heroes of Homer's Trojan war. This correction appears only in the Index Alphabeticus of the work, and unless precisely pointed out, it is, from the obscurity of its situation, very likely to escape observation.

The figure in the work of Drury is confessedly coarse and indifferent, and the colouring wholly destitute of that delicacy and softness by which the insect is itself distinguished : the under surface is not represented in that work, nor does the figure of either the upper or the lower surface occur in any other within our present recollection.

VERMIOLOGY.

PLATE CXLIV.

CORALLINA OPUNTIA

INDIAN FIG-CORALLINE

OR

ARTICULATED CORALLINE OF JAMAICA

VERMES

ZOOPHYTA.

GENERIC CHARACTER.

Animal growing in the form of a plant; stem fixed to extraneous bodies, and composed of capillary tubes, whose extremities pass through a calcareous crust, and open into pores on the surface: branches often jointed and always subdivided into smaller branches, which are either loose and unconnected, or united as if agglutinated together.

SPECIFIC CHARACTER

AND

SYNONYMS.

Trichotomous, or having three jointed branches, the joints compressed, kidney-shaped, and undulated at the edges.

PLATE CXLIV.

CORALLINA OPUNTIA : trichotoma articulata, articulis compressis undulatis remiformibus. *Ellis and Soland. p.* 110.

CORALLINA OPUNTIA. *Linn. Syst. Nat. ed.* 12. *p.* 1304. *Gmel.* 3836. 346. 1.

Corallina opuntioides, ramulis densioribus, et foliis magis sinuatis atque corrugatis. *Sloan Hist. Jamaica,* 1. *p.* 57. *t.* 20.

It is observed in the history of Zoophytes edited by Dr. Solander, from the papers of Mr. Ellis, that this kind of Coralline is found on the coast of Jamaica and the other West Indian islands, and that "it had been lately found on the shore of Prince's Island, in the straits of Sunda, by Dr. Badenach." From the precise manner in which this locality and the name of its observer are mentioned, we are indueed to believe it might have been then regarded as a species less abundantly disseminated than it is known to be at this time. Several of the earlier writers had described it, but as a production of the vegetable not of the animal race, and among others, Bauhin, Clusius and Clifford. At this more enlightened period, its animal origin is no longer considered doubtful; it is now admitted with the other Corallines and their analogous genera, as the production and habitation of the marine polypes. The true colour of this Coralline in the living state is whitish, tinged with cream colour, sometimes with a roseate hue, and very frequently with green, probably a filmy incrus-

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tation of the green ulva, the result of being stained or partially coated with other marine vegetables of that colour. In the depauperated state the colour is dirty white, inclining to cinereous.

The coral reefs in the West Indies are very often seen profusely overmantled with the flexible pendant groups of this species of Coralline, and when diversified with colours, more especially those which partake of the various shades and hues of green, it assumes a moss-like appearance of singular beauty, that is oftentimes mistaken at a little distance for moss itself. The filamentous ramifications that pass through the main tubes of the joints, and connect the whole, are perfectly flexible and capable of yielding to the motion of the waters, while from their great tenacity they resist the force of the restless waves, except in storms or commotions of unusual violence. The base of the main stem is furnished with a tuft of those tenacious filaments, by means of which it affixes itself to the rocks, or coral reefs, and various extraneous bodies.

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